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PERSPECTIVE VERSUS CAPRICE IN EVALUATING TOXICITY OF CHEMICALS IN MAN

CHAIRMAN'S ADDRESS

Maurice H. Seevers, M.D., Ph.D., Ann Arbor, Mich.

Life in these United States in the mid-twentieth century is so dependent on the products of chemical technology that no field of human thought or endeavor can ignore its dominating influence. Given reasonable time, the chemist appears to be able to construct a product to meet almost any set of specifications, the limiting factor being the imagination of the designer. Developments in this field have moved forward so rapidly in the last two decades that even the pharmacologist can scarcely keep abreast of the influx of new drugs, while the toxicologist is swamped with the multitude of agricultural, industrial, and household chemicals that are flooding the market.

Many of these compounds are highly toxic by any standard. Others are potentially capable of effecting long-range biological actions about which little is presently known. The public, ignorant of these effects, deserves and expects protection against unlimited exploitation of these new substances. The question is how much protection a government can be expected to guarantee to the nation and how it shall be accomplished. It would appear to be in proper perspective to say that the least the public should expect is that the algebraic sum of beneficial and detrimental effects of any chemical substance represent a significant positive balance in favor of benefits to the person and/or the state. By the same token, it seems out of perspective to attempt to protect the public against every conceivable contingency that may occur. The quantity of technical information concerning the biological actions of old and new chemicals, even in that circumscribed area of principal interest to the physician, the effects of chemicals on man, is now so great as to pose a most difficult problem in medical education, since it is to be expected that the medical student, the general practitioner, and even the medical specialist can assimilate only a very small fraction of this mass of material.

American physicians are indeed fortunate in being able to inform their patients that drugs purchased on prescription or for self-medication are almost certain to be of proper identity, purity, quality, and quantity. This situation is virtually guaranteed by the wise provisions of the Food, Drug, and Cosmetic Act of 1938, especially the new drug section, which requires approval in advance of distribution. In the main, fair perspective has been maintained in administering the act as it relates to drugs, and the medical profession has retained the initiative in this area, probably because it is better informed about the tools it uses daily. Drugs, however, represent only a relatively small fraction of the total problem of toxicity of chemicals for man. It is also the easiest fraction with which to deal, since a greater risk is permitted and toxicity is usually easier to determine. In the fields of food additives, pesticide residues, industrial exposure, and many other situations involving borderline decisions between toxicity and nontoxicity, the problems are exceedingly difficult. In these areas, the medical profession has lost the initiative, even in many situations in which its members are the only persons with competence to make decisions critical to the public welfare.

This is not surprising and may not even be seriously detrimental to the public welfare, since decisions based on this technical information affect every facet of human activity so profoundly that they represent legitimate concern of sociologists, economists, legalists, moralists, politicians, and internationalists, as well as physicians and biologists. It is almost axiomatic that areas of activity such as these, in which opinion must often substitute for lack of factual data, may also become the province of the crackpot, the self-styled scientist, and the well-meaning but misinformed reformer. Any of these persons may exert a powerful influence on the general public by posing as a champion of the individual safety and protector of the public welfare.

It would be surprising indeed if proper perspective were to be retained by all participants in a situation involving such a large number of points of view and so many selfish interests. Who should logically bear the responsibility for maintaining proper perspective in a situation that involves such a maze of conflicting forces?

From the Department of Pharmacology, University of Michigan.
Read before the Section on Experimental Medicine and Therapeutics at the 102nd Annual Meeting of the American Medical Association, New York, June 3, 1953.

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Obviously the principal responsibility for retaining perspective is in the hands of those who are authorized to administer the law and the regulations enacted under the law.

My purpose is to call attention to certain situations involving nondrug chemicals, food additives, pesticides, and other commonly used products. These facts should be of interest, since their implications represent a cause for professional as well as civic concern. As a pharmacologist, whose business it is to keep informed on matters related to toxicity, I am in a position to recognize and to view with alarm the gradually growing body of practical propagandistic pseudoscience that is being permitted to increase by those who are legally and morally responsible for retaining perspective, in order to fulfill what they believe, undoubtedly in all honesty, to be their obligation to the American public.

EXISTING LEGISLATION AND PHILOSOPHY

For approximately 50 years, the food division of the Food and Drug Administration has adhered to a basic administrative policy that no chemical shall be added to foods. This philosophy was first established, even prior to the enactment of the 1907 Food and Drug Act, by H. W. Wiley, who was then chief of the bureau of chemistry, U. S. Department of Agriculture, the predecessor of the present Food and Drug Administration. There have, of course, been many decisions that are contrary to this policy, since it is difficult to consistently find scientific support for a negative position. It is not my intention to discuss the merits of this policy but to declare what I believe to be the results in loss of perspective from adherence to an administrative policy that is not based on sound scientific principle. Lest there be any doubt that such a policy is still in existence, I quote from testimony offered by Dr. Dunbar, the recently retired commissioner of the Food and Drug Administration, before the House select committee to investigate the use of chemicals in food products, the Delaney committee: "I feel that no chemical or no new chemical that is subject to any question as to safety should be employed until its possible injurious effect, both on acute and over a long-time chronic basis, has been shown to be nonexistent. In other words, any chemical that is proposed for use ought to be approved in advance of distribution in the food product to be utterly and completely without the possibility of human injury." Strict adherence to this statement would be to deny man the use of every chemical substance in view of the unquestioned fact that no method ever has been, or ever can be, devised that will permit an exact advance prediction of human hazard. In simple terms, no competent pharmacologist, toxicologist, or clinician will guarantee that there is no risk present in making available a new chemical for widespread distribution.

Although I believe that any philosophy based essentially on prohibition is impossible of scientific defense, my concern does not stem primarily from this fact. I am much concerned, however, as a scientist, about the methods used in the name of science to support an indefensible policy. These methods are essentially based on a studied attempt to confuse and mislead the public. My remarks are not intended to be an exercise in semantics, but I wish to make my point by relating what has happened to the terms, toxicity and poisonous. These terms have become so misused and so abused by pseudoscientists, politicians, and others that they now connote almost any type of action, or reaction, whether biological, sociologic, or economic, that is reported to be inimical to the public interest. The shifting of these terms from a scientific to a lay connotation places the pharmacologist and the toxicologist, as well as the clinician, in a dilemma. They are asked and expected to do the impossible. The principal task of the pharmacologist and the toxicologist is to supply sufficient basic information concerning the biological action and potential toxicity of a chemical substance on animals to warrant its preliminary clinical study in man as a calculated risk. What is the purpose of these studies if their application to man is denied? The a priori determination of calculated risk is an exceedingly complicated problem. In many instances it must involve the considered judgment of a large number of fully competent specialists in a variety of fields, including nonbiological areas. This is especially true when prolonged and extensive exposure of a whole population is involved.

As a result of the fact that so many persons may ultimately become involved and that so many decisions may be necessary to determine the calculated risk with accuracy, the easiest position for those in fields of great responsibility to assume is one that amounts virtually to complete prohibition based solely on absolute toxicity. This can be easily accomplished by the establishment of standards that are impossible to attain regardless of conditions of use, capricious and discriminatory decisions, and the like. Such a view is easy to assume since it is most amenable to regulation, requires the least energy to defend and to administer, and requires no effort whatsoever to muster the support of the extremists, the misinformed, and the opportunists, to mention but a few. Strangely enough, the public appears to demand a share in deciding what shall be a calculated risk, although this seems contrary to the statements of representatives of this philosophy. A few examples will suffice. The per capita use of cigarettes increases each year in spite of the warnings about such deleterious effects as cancer. The per capita consumption of alcohol has never diminished appreciably, although its misuse represents one of the most important sociologic and medical problems. Did the rebellion against the Volstead Act represent a perversity of an ignorant population or did it indicate that, even though a majority of the consumers of alcohol knew its potential toxicity and its personal as well as a social hazard, they were still willing to calculate these risks to be warranted when balanced against personal and social benefits?

There is a tendency to believe, or to lead the public to believe, that the new chemical agents are fundamentally different from those old chemicals with which we have long been in contact. The inference is made that some new principles are needed for handling the problems of toxicity that arise in this advanced chemical age. These new chemicals, however, do not differ in any respect, except possibly in potency, from those with which we are more familiar. Nearly every known chemical substance can produce a toxic action on man if the exposure is adequate. In fact, selective toxicity is the basic principle that governs the activity of the large segment of the

chemical industry that deals with the actions of chemicals on biological systems. This principle is basic in the search for a cure for cancer, tuberculosis, or any other disease, as well as in the search for a new insecticide, soil fumigant, or food preservative.

It cannot be denied that sensible laws and regulations are necessary to protect the public against itself and against those unscrupulous persons who would prey on the ignorance or cupidity of individual members of the population. It would appear to be neither dignified nor necessary to use shabby tactics to effect this protection. Yet short-sighted policy, incompetence, bureaucracy, and politics have resulted in such an admixture of fiction with science that it is no longer possible to distinguish truth from propaganda, and vice versa. Numerous technical devices that prohibit rather than aid the determination of the factual state as it relates to toxicity have become established over a period of time; for example, the use of the terms adulteration and standards of identity as virtual synonyms for toxicity has become common administrative practice. Other examples include the use of arbitrary margins of safety without much regard for the conditions of use, transference of toxicity data from its application in one use to an instance in which the data apply to another use, without consideration of the hazard or calculated risk in the latter usage, the denial of established facts based on experience with large groups of human beings if these facts deviate from findings in other animal species, and the use of incompetent witnesses or pseudoscientists to bolster up administrative decisions and influence legislation.

One of the best recent examples of this type of action relates to the decision that bans softeners in bread. These cannot be considered to represent a biological hazard under present conditions of use. That softeners may not offer sufficient material benefit to society to warrant their use is not the point. The real point is how the problem was solved administratively in order to muster support for the decision to discontinue the use of softeners. This was done by declaring the manufacturers guilty of "deceptive" practices in the name of toxicity because these substances had not been shown to have been nontoxic throughout the whole lifetime of man. If this is perspective, then the scientist had better go out of business.

OUTLOOK FOR FUTURE LEGISLATION

Prolonged adherence to a philosophy of action that places the burden of proof on the administrator, as is the case with foods under the present law, is no easy task especially when capricious decisions are under constant attack. As is inevitably the case when technical progress exceeds human capacity to deal adequately with a problem, solution is sought in further legislation. Theoretically, this should represent a gain to the state since, in principle, laws are enacted to enable society to retain or regain perspective rather than the converse.

Be that as it may, new legislation is now being considered that will set up a so-called new chemical section of the federal act that will deal with foods and food products, and will be analogous to that now in use for new drugs. The principal provision of this proposed legislation would be to require proof of the nontoxicity of chemicals in advance of their use. I do not intend to discuss the merits of this new legislation, except to say that I believe that it could be as beneficial as the present new drug section providing it was formulated, enacted, and administered with perspective based on scientific fact. I believe that physicians, who obviously have a vital concern with this problem, should be apprised of the total situation as it now exists, since such new legislation if administered by the existing philosophy would assure a permanently distorted approach to the problem.

In order to effect such legislation, an "impartial" committee of the House of Representatives to investigate the use of chemicals in food products was impaneled to hold hearings on the problem. In the midst of these hearings, the chairman, James P. Delaney of New York, published an article in the July, 1951, issue of the *American Magazine*. This lurid article, a masterpiece of innuendo and fantasy, based principally on conjecture, was designed for the one purpose of frightening the housewife into demanding further legislation. Mr. Delaney stated: "The Food and Drug Administration has listed 704 chemicals which are being used in our regular food supply, of which only 428 are known to be safe. In other words, 276 chemicals are unknown and untested quantities, and some of them may be slowly poisoning us!

"This potentially lethal situation is due to a curious loophole in our present laws, a tragic legal joker that permits us to become a nation of 150,000,000 guinea pigs guilelessly testing out chemicals that should have been tested adequately before they reached our kitchen shelves.

"Doctors testifying before the House committee have stated that there may be some connection between these new chemicals and the increase of such diseases as cancer, polio, and the mysterious virus X."

It is interesting to note that laymen also testified before the committee, on medical subjects. "Louis Bromfield, novelist and gentleman farmer, testified that virus X, the mysterious, influenza-like epidemic disease, may be nothing more than manifestations of DDT poisoning; and the increased incidence of heart disease, cancer, and leukemia may result from cumulative poisoning by pesticide residues."[1] Evidently, medical evidence from a layman was just as convincing to the House committee as that from the doctors.

Examination of the testimony that was collected with the active backing and support of the regulatory agency involved and was offered before the Delaney committee reveals it to be largely of the caliber just mentioned. For example, nitrogen trichloride (Agene) has been used in the United States for over 25 years to age and bleach flour. A few years ago, it was discovered that this compound produces convulsions in dogs. Although the American people, for 25 years, have been using bread made of flour bleached with this agent, there is no evidence that it has had any deleterious effect on them; yet several self-styled experts, writing in the press and testifying in the Delaney hearing, conjectured or inferred that epilepsy, alcoholism, and a variety of compulsive, convulsive, and excitatory disorders may have resulted from the use of this material for the last 25 years. Millers and

1. Coming: Tougher Food Law, Chemical Week, vol. 69, No. 2 (July 14) 1951, pp. 11-12.

bakers "voluntarily" agreed to abandon its use. I would not object to this action even if legal compulsion had actually been required to enforce it. In this particular instance, the justification for use is so negligible that the calculated risk must be equally negligible. I oppose vigorously, however, the capricious use of these data even to infer toxicity for man. This is more reprehensible since it was designed primarily, if not exclusively, to influence legislation.

If a negative experiment on man involving a 25 year trial in a whole population (possibly 2.5 billion man-years) is ignored as proof of nontoxicity, what conceivable type of evidence could a pharmacologist or a clinician present in advance of distribution in a food product to be utterly and completely without the possibility of human injury?

In defense of the competent and experienced scientists associated with these regulatory agencies, let me say that they are often forced by their position to render decisions in the face of innumerable pressures, even though they often lack the definitive information necessary to an adequate decision. This is likely to become worse rather than better. For this reason, some measures should be taken that would permit them to share responsibilities in areas in which they lack competence. Let me cite a few examples of current or future headaches. Chemicals for systemic use that are effective in population control are now available. Can a few administrators with small technical staffs deal adequately with this problem? The problem of carcinogenicity of chemicals stands as an ever present shadow over those responsible for making decisions. There is no possibility of devising experiments on animals that will conclusively guarantee in advance freedom from such an action in man. Are we to deny ourselves the trial use in man of all chemicals because of a possible carcinogenic effect? Chemicals that will alter genetic characteristics in plants, modify their growth, and produce numerous modifications of their biological characteristics have long been known. It is only a matter of further study to find such chemicals that will produce similar effects in man. Probably they will be discovered by accident. In all likelihood, they will not be ascertained in advance. The imagination of the reader may furnish even tougher assignments for the future. Undoubtedly, if most of us were confronted with such problems we would fumble and possibly lose perspective. I hope, however, not to such a degree as to advocate 10 year administration of chemicals to the monkey before admissibility for use in man as was advocated by a well-meaning witness in testimony before the Delaney committee. As one who knows from 25 years' experience how difficult it is to maintain monkey colonies for even a few years, I doubt that the witness has much competence in this area.

CONSIDERATION OF BASIC PRINCIPLES

Is there a better solution to the problem of properly evaluating toxicity of chemicals for man without resorting to the unscientific methods already alluded to? Without offering a categorical answer to this question, it appears timely at least to reconsider what I believe to be certain irrefutable principles upon which evaluation of human toxicity must be based. 1. Every chemical substance has a nontoxic and a toxic dose for man; that is, no chemicals must be poisons, and all chemicals can be poisons. 2. The use of every chemical substance by man, whether it be as a food, drug, cosmetic, insecticide, or for any purpose, is a potential hazard. There are only few exceptions. The risk may be very small or very great, depending on the nature of the chemical, the conditions of use, the degree and duration of exposure, and the condition of the person. 3. The toxicity of chemicals for man can be ultimately determined only by experiments on man. Studies on many species of infrahuman forms can give reasonable assurance that the chemical may be tried in man with a minimal risk, but no set of conditions involving animals alone can prove nontoxicity or toxicity for man. The determination of certain types of potential toxic effects such as genetic changes or carcinogenicity may require several generations or a lifetime of large human populations. It cannot be determined conclusively on any other animal species. On the basis of numerous examples of specific toxic action limited to a single animal species, it is safe to conclude that some day a chemical will appear that is specifically toxic for man alone. 4. The use of every chemical substance in man involves a calculated risk. The degree of risk is calculated by balancing the toxicity of the chemical under conditions of use (its hazards) against its benefits to man, whether these benefits are direct or indirect. Minimal risk is encountered when the dose or extent of exposure is calculated to be tolerated by the weakest member of the population. This would take into account every person who may be specifically sensitive to the chemical. For chemicals designed for internal use or capable of being absorbed into the body, it is impossible to predict with certainty in advance a quantity of the material, or establish a regimen of exposure, or to calculate a margin of safety, which will at the same time assure complete biological effectiveness and absolute nontoxicity in any human population. In other words, the maximal tolerated dose for the weakest member of a population may be ineffective in the most resistant, whereas an effective dose for the latter may be toxic to the former. The common practice of arbitrarily assuming a so-called margin of safety for man, calculated on the basis of data on animals, usually a quantity or concentration tenfold to one-hundred-fold greater than that shown to produce minimal injury in animals, is at best no more than a means of permitting preliminary experiments in man. At its worst, when used as a substitute for human experience, it arbitrarily eliminates from consideration substances that may be of great practical value. In any event, scientific considerations would demand that such calculations be discarded entirely in the face of human data. 5. The greater the benefit of a chemical substance to man, the greater the justification for the increase in risk in its use. For example, an invariably fatal disease justifies the use of severely toxic compounds. As much as 10% expansion of a national food supply by the use of a food preservative or a pesticide would appear to justify a greater degree of risk than that ordinarily permitted in foods in view of the world responsibilities this nation is being called on to assume. In countries where critical food shortages exist, the individual risk could be very materially increased when it is balanced against national malnutrition and death from starvation.

On the basis of these considerations, we are now, and we will always be, confronted with two distinct and difficult problems, even after the pharmacologist has completed his studies on animals. First, the actual determination of toxicity in man. This requires now, as it will always require, pilot scale use of chemicals in man under controlled conditions in order to ascertain whether full scale use on the whole population may be justified. Such a procedure is inevitably associated with a certain calculated risk. Neither legislation nor regulation will alter this fact. The only obvious solution to this problem appears to be "limited use" acceptance until sufficient data in man are collected to arrive at a conclusion. This type of approval obviously could be justified only in the light of careful evaluation of justification for use. The only alternative, from a scientific and medical point of view, is for the public, satisfied with the *status quo*, to declare a moratorium on further technological advance in the chemical field and individually and collectively to refuse to play the role of Mr. Delaney's "guileless guinea pigs."

The second problem is the determination of justification for use in the light of all the biological and social forces existent in the population. In the latter area, no satisfactory agency or mechanism exists with the composite know-how and vision to deal satisfactorily with this problem, nor does it seem desirable to create such a permanent agency, because each new problem requires a different background in skills and experience for an equitable decision. The real defect in our thinking at the national level has been that, whereas we have created the mechanism for accurately determining toxicity in animals and we know how to determine toxicity in man with a minimal risk, the most difficult facet of this problem, the determination of justification for use, has not been kept in proper focus. It does not seem likely that perspective can be easily gained when any person may assume competence and get a respected hearing without regard to his training, experience, or judgment in these difficult areas, in our lawmaking tribunals.

It would appear that a satisfactory solution to both problems might be gained by the use of *ad hoc* committees implemented by qualified persons of wide experience and judgment in the principal areas under consideration. Such a technique, while not relieving the regulatory agencies of responsibilities assigned under the law, would have the obvious advantage of at least assuring the public of valid technical as well as moral justification for decisions that might otherwise be made without perspective. Such a commendable plan, operating within the framework of the National Research Council, was utilized most effectively in bringing perspective to a difficult problem dealing with toxicity of one of the antibiotics. Expansion of this technique into other branches of knowledge as they relate to this whole problem of toxicity would appear to be a most worth-while experiment. Finally, the public should be informed as to the facts. In the final analysis, it is the citizen who would like to assess the calculated risk for himself.

620 Oxford Rd.

CHOLECYSTOGRAPHY IN INFANTS

Ruth C. Harris, M.D.
and
John Caffey, M.D., New York

Roentgen visualization of the gallbladders of infants has been consistently unsatisfactory and has been of little value in diagnosis of lesions of the biliary tract. Satisfactory cholecystograms have been commonly obtained in patients older than three years when the adult dose of either tetraiodophenolphthalein or iodoalphionic acid (Priodax) has been used.[1] As a rule, films have been taken about 14 hours after the oral administration of contrast material.

In 1945 Hrdlicka, Watkins, and Robb [2] reported that they had obtained satisfactory gallbladder shadows in two infants 9 and 10 months of age and in three of four infants 12 to 18 months of age. Iodoalphionic acid was used in doses two or three times the usual adult requirement per kilogram of body weight. In infants from one to seven months, no satisfactory gallbladder shadows appeared. Films were made 12 to 18 hours after the oral administration of the contrast agent diluted with orange juice.

In 1951, Catel [3] stated that visualization of the infantile gallbladder is maximal at 6 to 8 hours after the intravenous injection of 0.05 gm. per kilogram of body weight of tetraiodophenolphthalein. His patients were maintained on a diet of tea, boiled rice, and saccharin for the day preceding the test. The age of the youngest patient in whom a satisfactory gallbladder shadow developed is not stated by Catel.

The appearance of the gallbladder shadow after the oral administration of radiopaque material depends on adequate absorption, active secretion of material by the hepatic cells into the bile ducts, and concentration within the gallbladder. With these facts to guide us, we are reporting work in progress in the study of gallbladder function in infants.

GROUP AND TECHNIQUE

We have studied 20 infants and children younger than three years after oral ingestion of iodoalphionic acid or iodopanoic acid (Telepaque) under slightly varying con-

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Read before the joint meeting of the Section on Pediatrics and the Section on Radiology at the 102nd Annual Meeting of the American Medical Association, New York, June 2, 1953.

1. Caffey, J.: Pediatric X-Ray Diagnosis: A Textbook for Students and Practitioners of Pediatrics, Surgery and Radiology, ed. 2, Chicago, Year Book Publishers, Inc. 1950, p. 390.

2. Hrdlicka, V. E.; Watkins, C. G., and Robb, J. A.: Cholecystography for Children, Am. J. Dis. Child. **70**: 325 (Nov.) 1945.

3. Catel, W.: Differentialdiagnostische Symptomatologie von Krankheiten des Kindesalters, ed. 2, Stuttgart, Georg Thieme, 1951.

ditions and 3 infants after administration of sodium acetrizoate (Urokon) intravenously. Since we did not know the exact time of maximal concentration of these agents in young patients, hourly films were made after the administration of contrast material, usually from the 3rd to the 10th hour, with occasional later films. All but three patients received 0.15 gm. of drug per kilogram of

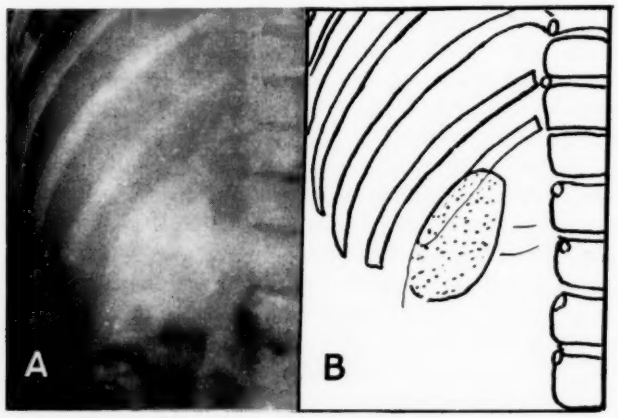

Fig. 1 (case 2).—*A*, cholecystogram showing gallbladder from frontal projection 6½ hr. after third 12 hr. dose of iodopanoic acid (Telepaque); *B*, schematic representation of the same.

body weight. This dose was chosen because it had not produced toxic symptoms in Hrdlicka's patients.

The following technique was used. Nothing was given orally after midnight. At 6 a. m. either powdered iodoalphionic acid or iodopanoic acid was mixed with two or three teaspoonfuls of orange juice and then swallowed by the infant. No food or fluid was given during the next eight hours when films were made hourly, first in frontal projection only and later also in left anterior oblique position. Then, if the study was to be continued, more orange juice or Karo water was given. When films were taken as late as 24 hours, infants under

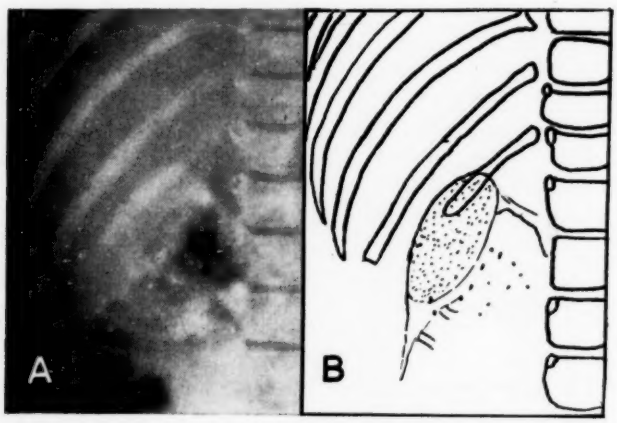

Fig. 2 (case 2).—*A*, the same as fig. 1*A* 7½ hr. after third 12 hr. dose of iodopanoic acid (Telepaque), *B*, schematic representation of the same.

six months were fed only Karo water and skimmed milk, while older patients were fed a fat-poor food. No untoward effects were noted and neither vomiting nor diarrhea occurred during the few days after the examinations.

At first iodoalphionic acid was used alone. In the first four patients, however, there were two failures of visualization of the gallbladder, and, in the other two, the gallbladder shadows were too faint for satisfactory interpretation. The large amounts of opaque material visible in the intestinal tract suggested that poor absorption of the contrast agent was a major cause of the failure of visualization of the gallbladder. Since iodoalphionic acid is soluble in an alkaline medium only, it is presumed that in these children the hydrogen ion concentration of the small intestine was not sufficiently low to give adequate absorption. This was supported in part by our finding that, of 24 infants under three months of age who had normal trypsin levels of duodenal juice, only 13 had a duodenal pH as high as 7. In the other 11, the duodenal pH ranged from 5.0 to 6.5. For our subsequent experiments in gallbladder visualization, therefore, sodium bicarbonate was added to the combination of orange juice and iodoalphionic acid in dosage of 0.5 or 1.0 gm.

Among eight infants so examined, satisfactory visualization of the gallbladder was obtained in five ranging in age from 3 to 17 months. In one of these five, a distinct shadow was present only in the 9 hour film. In the remain-

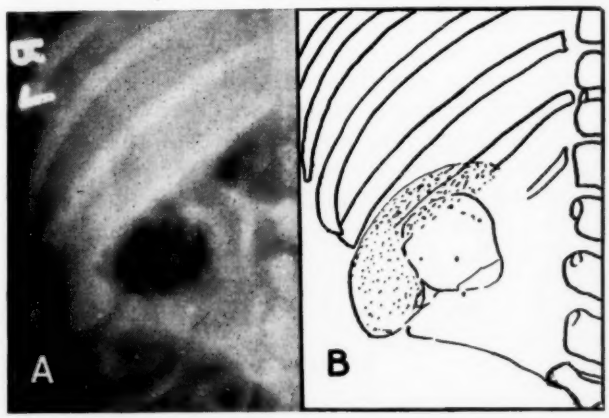

Fig. 3 (case 2).—*A*, the same as fig. 1*A* 8½ hrs. after third 12 hr. dose of iodopanoic acid (Telepaque); *B*, schematic representation of the same. Note that gallbladder shadow is almost obscured by gas in the hepatic flexure of colon.

ing three, no gallbladder shadow appeared in one 44-day-old infant or in a 3-month-old infant, and a faint shadow was seen in a 42-day-old infant.

Early in 1952 iodopanoic acid became available, and the remainder of the examinations were made with this material without added sodium bicarbonate. Results were excellent in patients older than 11 months. There were, however, failures in two infants aged 38 days and three months. Iodopanoic acid had been given in doses of 0.15 gm. per kilogram of body weight. Accordingly, 0.45 gm. of iodopanoic acid per kilogram of body weight was given in three divided doses at 12 hour intervals to the 3-month-old infant (case 2), and the first films were taken 2½ hours after the last dose. A distinct gallbladder shadow was seen at 6½, 7½, and 8½ hours (fig. 1, 2, and 3), and no shadow was seen 14 or 27 hours after the third dose. No clinical evidence of toxicity was observed after this large dose of iodopanoic acid. Since this infant had hydrocephalus and the dosage was based on body weight, she received a relatively larger dose of iodopanoic acid than would a normal infant of the same weight

(table 1). We used diiodofluorescein in a 0.04 gm. per kilogram dose to study this same patient by the intravenous technique. The gallbladder shadow was seen only in the five hour film, at which time the blood level was 2% of the calculated initial blood level of dye. This timing indicated that no improvement in technique could be obtained by using this dye intravenously in an effort to eliminate intestinal absorption.

A 2-month-old infant was given 0.2 gm. of iodopanoic acid per kilogram of body weight divided into two 12 hour doses; his films made 6 to 10 hours after the second dose did not show a gallbladder shadow. In a 14-month-old infant (case 3) with acute pancreatitis, no gallbladder shadow was seen 4 to 12 hours after 0.15 gm. iodopanoic acid per kilogram were given. Two more doses were given

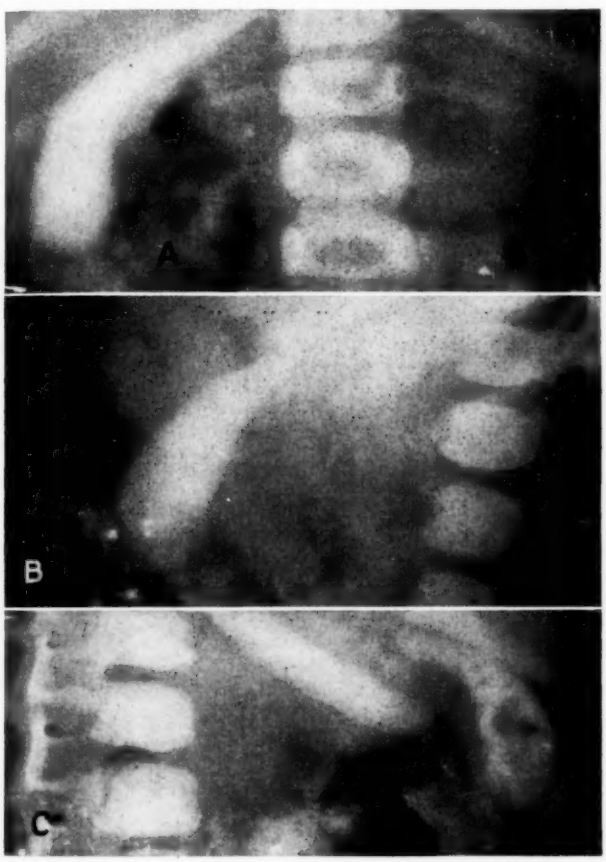

Fig. 4 (case 3).—Cholecystograms showing gallbladder 10 hr. after the third 12 hr. dose of iodopanoic acid (Telepaque) in *A*, posteroanterior, *B*, right lateral, and *C*, left anterior oblique positions.

at 12 hour intervals. Four hours after the third dose, the gallbladder shadow was intense and remained so for 8 hours (fig. 4). A third infant (case 1), aged one month, also given three 12 hour doses of iodopanoic acid, had a good shadow from 4 to 10 hours after the third dose but had no shadow after a single dose (fig. 5 and table 1). Iodopanoic acid in dosage of 0.1 gm. per kilogram of body weight was given to six children between 3 and 12 years of age with good visualization of the gallbladder shadow on single films from 10 to 18 hours after ingestion of the material.

The figures in table 2 present the time of roentgen examination in each patient and the density of the gallbladder shadow at each hour after the contrast material was given. The comparative density of the shadows was determined by a combination of visual appraisal and the aid of a densitometer. The gallbladder shadow was greatest between the fourth and ninth hour after the ingestion of the contrast agent in infants with normal biliary tracts. When the gallbladder shadow was seen in only one of a series of films, it was seen in films made at the fourth, fifth, or ninth hour.

The delayed excretion of contrast material by a diseased liver is illustrated in case 11. This infant had neonatal hepatitis with persistent jaundice until seven months of age. The sulfobromophthalein (Bromsulphalein) test at 11 months showed only 2% retention of dye in 30 minutes, but after the administration of iodopanoic acid filling of the gallbladder was delayed so that a good gallbladder shadow was not obtained until the 11th hour, and the most distinct shadow appeared at the 27th hour. After 52 hours the shadow had disappeared.

The gallbladder shadow failed to appear in six infants younger than 5 months and in a 10-month-old baby with brain damage who died one week later. Absence of the gallbladder shadow may have been factitious; it may have been obscured by the heavier shadows of iodo-

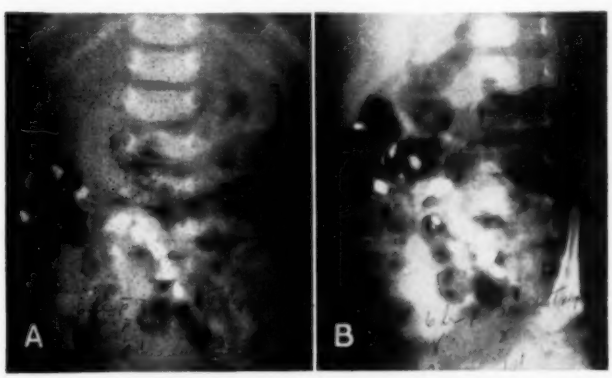

Fig. 5 (case 1).—Cholecystograms taken 6 hr. after the third dose of iodopanoic acid (Telepaque) in *A*, posteroanterior, and *B*, left anterior oblique positions.

panoic acid in the hepatic flexure of the colon, by an accumulation of gas in the right upper quadrant (fig. 1, 2, and 3), or by improper positioning of the patient. The gallbladder shadow is not seen in the frontal projection of films of a 3-year-old child because of excess gas shadows but is well outlined in the left anterior oblique position. Films were made 11 hours after administration of 0.1 gm. per kilogram of iodopanoic acid and 40 minutes after a fat meal. This was an unsuccessful attempt to opacify the bile ducts during evacuation of the gallbladder following oral ingestion of fat. Shehadi [4] has reported that visualization of the bile ducts is possible in 50% of adult cases during the phase of contraction of the gallbladder when iodopanoic acid has been given.

Of interest is the finding that 5 hours after 1.4 gm. per kilogram of 70% sodium acetrizoate given intravenously to a 9-year-old boy for angiocardiography, both gallbladder shadow and outline of renal pelves and bladder were distinct. An attempt to use this technique in a 9-week-old infant, one of 3 months, and one of 5 months resulted only in good visualization of renal structure.

4. Shehadi, W.: Brochure on Telepaque, New York, Winthrop-Stearns, Inc., 1951, p 8.

Intravenous administration of sodium decholin has been advised [5] to speed the flow of bile and thereby to permit earlier visualization of the gallbladder shadow. No information is available regarding its oral use for such a purpose. Administration of 0.125 gm. of dehydrocholic acid by mouth to one patient who also received iodopanoic acid resulted in no evidence of gallbladder shadow within the next four hours. This single trial was not an adequate test and more studies must be undertaken.

shadow. However, since we had no control studies with iodoalphionic acid alone in the same patients, this must be investigated further. It is said that patients with duodenal ulcers have poor gallbladder shadows despite adequate intestinal absorption of dye.[6] Since we have not examined the gastric secretion of any of these patients, the part acidity plays is difficult to assess. It is known that gastric acidity is normal at birth and thereafter declines during the first month of life [7] but then gradually increases throughout the rest of the first year.[8] Whether

TABLE 1.—*Roentgen Visualization of Gallbladder Following Three Doses of Iodopanoic Acid (Telepaque) at Twelve Hour Intervals*

Case	Age	Gm./ Dose *	Hours After Third Dose											Diagnosis
			1	2	3	4	5	6	7	8	9	10	14	27	
1	36 days	0.6	..	..	..	++	++	++++	++++	++++	++++	+	..	..	Cleft lip and palate
2	3 mo.	0.8	..	0	+	++	++	+++	++++	+++	.....	.....	0	0	Hydrocephalus
3	14 mo.	1.5	..	..	..	++++	++++	++++	++++	++++	++++	++++	..	..	Acute pancreatitis

* Dose of Telepaque, 0.45 gm./kg.

TABLE 2.—*Degree of Roentgen Visualization of the Gallbladder in Infants*

Case	Age	Drug, Gm.	Hours After Dye																	Diagnosis
			1	2	3	4	5	6	7	8	9	10	11	14	17	27	33	50	77	99	
4	42 days	0.6 P* and 0.6 Na†	..	0	0	?	±	0	0	0	..	..	..	..	..	..	..	..	..	..	Inguinal hernia
5	3 mo.	0.8 P and 0.5 Na	..	+	+	++	+++	++	+	+	++	..	..	0	..	0	..	..	..	..	Hydrocele
6	3 mo.	0.5 P and 1.0 Na	0	0	?	?	+	+	?	+	..	..	..	..	..	..	..	..	..	..	Inguinal hernia
7	5 mo.	1.3 P and 1.0 Na	..	?	+	+	++	+	++	+++	+++	..	..	..	..	0	..	..	..	..	Phimosis
8	6½ mo.	1.5 P	..	0	0	+	0	0	0	..	..	..	..	..	..	..	..	..	..	..	Sinusitis
9	7 mo.	1.0 P and 1.0 Na	..	..	+	+	0	+++	0	0	0	..	..	..	..	..	..	..	..	..	Pneumonia
10	11 mo.	1.5 P and 1.0 Na	..	..	?	?	++	++	+++	++	..	+++	++	..	..	+	..	+	..	..	Osteomyelitis of rib
11	11 mo.	1.2 T‡	..	..	0	0	0	?	0	?	+	..	++	..	..	+++	..	0	..	..	Post hepatitis
12	17 mo.	1.2 P and 1.0 Na	..	..	0	0	0	0	0	..	+	..	..	..	..	..	..	..	..	..	Chordee
13	26 mo.	1.5 P	..	..	0	0	0	+	+	+	+	0	..	..	..	..	..	..	..	..	Post tuberculous meningitis
14	30 mo.	2.3 T	..	0	0	+	++	++	+++	++++	++++	++++	+++	..	+++	++++	+	++++	?	0	Abdominal pain
	Total hourly films		1	6	11	11	11	11	11	10	8	3	3	1	1	5	1	3	1	1	
	Times gallbladder shadow seen		0	1	3	5	6	7	5	6	6	2	3	0	1	3	1	2	0	0	
	Time of most intense shadow		..	..	..	0	3	2	1	1	1	1	..	..	..	1	..	..	..	..	

* Priodax, 0.15 gm./kg.
† Sodium bicarbonate.
‡ Telepaque, 0.15 gm./kg.

Other causes of failure of visualization may be related to the degree of gastric acidity or intestinal alkalinity. This latter problem we have considered and believe that the addition of sodium bicarbonate to iodoalphionic acid may have improved the intensity of the gallbladder

these variations from a low of 10 cc. of 0.1 N hydrochloric acid to the higher levels of 35 to 50 cc. have any effect on the flow of bile and secondarily on the concentrating power of the gallbladder has not been tested.

We noted fluctuation in intensity of the shadows (table 2) during the period of observation. This polycyclic phenomenon has been described by Graham in adults and is caused by the emptying of the gallbladder and subsequent reabsorption of the agent into the portal system. Since intestinal mobility in young infants is greater than in older persons, perhaps failure of visualization is caused by too rapid excretion of material and inadequate

5. Weiss, S.: Diseases of the Liver, Gallbladder, Ducts and Pancreas: Their Diagnosis and Treatment, New York, Paul B. Hoeber, Inc., 1935, p. 244.

6. Eusterman, G. B.: Limitations of Cholecystography with Which Physicians Should Be Familiar, J. A. M. A. **90**: 194 (Jan. 21) 1928.

7. Miller, R. A.: Observations on Gastric Acidity During First Month of Life, Arch. Dis. Child. **16**: 22, 1941.

8. Cutter, R. D.: Normal Gastric Secretion of Infants and Small Children Following Stimulation with Histamine, J. Pediat. **12**: 1, 1938.

reabsorption into the portal vein. If this is so, "loading" with larger doses at 12 hour intervals may solve the difficulty of inadequate concentration of contrast material.

SUMMARY

Twenty-seven cholecystographic examinations of 25 patients under 3 years of age were performed with 15 successful visualizations of the gallbladder. Among 12 infants under 6 months of age given iodoalphionic acid (Priodax) or iodopanoic acid (Telepaque), visualization was successful in 6. Iodoalphionic and iodopanoic acid were given orally in dosage of 0.15 gm. per kilogram of body weight. In four patients, double and triple doses were given without toxic effects. Sodium bicarbonate given with iodoalphionic acid did not clearly aid in absorption of the contrast material. Sodium acetrizoate (Urokon), 70%, given intravenously in dosage of 0.7 gm. per kilogram, did not make the gallbladders of three infants opaque.

The gallbladder shadow was most distinct in the majority of cases between 4 and 9 hours after administration of the contrast material. In three patients the gallbladder shadow was seen in only one film out of several exposed. This demonstrates the necessity for taking serial films, in general, earlier in young children than in adults. Some of the technical difficulties in cholecystography in infants are discussed.

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PRACTICAL POINTS IN MANAGEMENT OF CORD BLADDER

Gershom J. Thompson, M.D., Rochester, Minn.

In 1936, at a meeting of the Section on Urology,[1] I reported the performance of transurethral resection on the vesical neck of a paraplegic man; the operation resulted in great improvement in urinary function. This patient had sustained a fracture of the spinal column and was incontinent of urine but months later finally had regained vesical control. Shortly thereafter he could urinate only with great effort exerted by the abdominal muscles. The transurethral operation made it possible for him to void freely and empty his bladder completely but still control urination.

In a previous publication, Braasch and I[2] outlined some of the theoretical and practical aspects in patients who had atonic bladders, including a number of patients who had neurogenic vesical dysfunction. In an article with Jacobson,[3] I examined the problem further and described 10 patients; 6 of them were adults varying in age from 24 to 52 years in whom the neurogenic dysfunction resulted from myelodysplasia. Transurethral operations had been done in all 10 in an effort to improve vesical function. It was demonstrated that patients who had varying degrees of urinary retention, some complete, were able to empty the bladder after operation. Even though sphincteric resistance was reduced by the procedure, the majority of these patients had no incontinence.

Nesbit and Gordon,[4] in 1941, reported "too great an imbalance between the obstruction by the spastic internal sphincter and the forces available for evacuation" often was present in patients who had sustained traumatic lesions of the spinal cord and cauda equina. They also stated: "transurethral resection of the internal sphincter may so relieve the vesical outlet obstruction as to allow satisfactory periodic evacuation." Emmett and Bisquertt[5] have further described the experience at the Mayo Clinic with this problem. Because of early experiences with transurethral resection, I employed this operation during World War II to relieve symptoms in a group of sailors and marines who had received injuries to the spinal cord. This work was summarized in 1947.[6]

The literature is replete with articles concerning injury to the spinal cord. Prather[7] and Bors,[8] among many others, have written about this subject, and it might be presumed that nothing more need be said to clarify any aspect of the problem. Some of the material presented, however, has been somewhat complicated; therefore, it appears worth while to attempt simplification of the subject as much as possible and to present an outline of the management of a patient afflicted with neurogenic vesical dysfunction for the physician who encounters only occasionally such a patient. Some practical suggestions will be made concerning what should be done during the several phases of recovery.

GENERAL ASPECTS

The care of the urinary tract, including the bladder, is only a small part of the treatment required by the patient who has an injury to the spinal cord. The urologist manages the urinary aspect of the problem, while other physicians explore the damaged cord, apply body casts, institute measures to avoid decubitus ulcers, and direct other phases of early rehabilitation, especially the physical therapy necessary to smooth recovery. Covalt and associates,[9] in an excellent article, have reviewed many of the important points in nursing care during the early

From the Section of Urology, Mayo Clinic.

Read in the Symposium on the Neurogenic Bladder before the Section on Urology at the 102nd Annual Meeting of the American Medical Association, New York, June 3, 1953.

1. Thompson, G. J.: Transurethral Operations: Changing Conceptions During Past Five Years, J. A. M. A. **107**: 1954-1958 (Dec. 12) 1936.

2. Braasch, W. F., and Thompson, G. J.: Treatment of Atonic Bladder, Surg., Gynec. & Obst. **61**:379-384 (Sept.) 1935.

3. Thompson, G. J., and Jacobson, C. E., Jr.: Neurogenic Vesical Dysfunction Due to Spina Bifida and Myelodysplasia: Treatment by Transurethral Resection of Vesical Neck, Am. J. Surg. **61**: 224-238 (Aug.) 1943.

4. Nesbit, R. M., and Gordon, W. G.: Management of Urinary Bladder in Traumatic Lesions of Spinal Cord and Cauda Equina, Surg., Gynec. & Obst. (no. 2A) **72**: 328-331 (Feb.) 1941.

5. Emmett, J. L., and Bisquertt, J. E.: Transurethral Resection in Treatment of Vesical Dysfunction Secondary to Inflammatory, Degenerative and Traumatic Lesions of Spinal Cord, S. Clin. North America. **27**: 950-977 (Aug.) 1947.

6. Thompson, G. J.; Nourse, M. H., and Bumpus, H. C., Jr.: Treatment of Paraplegic: Observations in Series of 101 Cases, J. Urol. **57**: 1085-1096 (June) 1947.

7. Prather, G. C.: Spinal Cord Injuries: Care of Bladder, J. Urol. **57**: 15-28 (Jan.) 1947.

8. Bors, E.: Urological Aspects of Rehabilitation in Spinal Cord Injuries, J. A. M. A. **146**: 225-229 (May 19) 1951.

9. Covalt, D. A.; Cooper, I. S.; Hoen, T. I., and Rusk, H. A.: Early Management of Patients With Spinal Cord Injury, J. A. M. A. **151**:89-94 (Jan. 10) 1953.

phases in the patient who has injury to the spinal cord and have made a splendid plea for early laminectomy and for early physical rehabilitation.

The attention required by the urinary tract, especially the bladder, during the period of recovery can be discussed conveniently from a practical standpoint by dividing it arbitrarily into three stages, namely, early, intermediate, and late. Actually, no clear division is present, and, of course, no positive time schedule can be applied. The rapidity of recovery varies considerably for a number of reasons, among which are the severity of the lesion and the thoroughness and efficiency of nursing and medical attention.

EARLY STAGE OF RECOVERY

Immediately after onset of paralysis, a Foley type of catheter, size 16 or 18 F., should be used for vesical drainage. Plain roentgenograms are made to determine the site and extent of injury to the spinal column. Early laminectomy is almost always advisable, although in certain instances, because of coincidental lesions or lack of facilities, it cannot be done immediately. As a rule, a body cast is applied; hence, it is not feasible usually to do excretory urography during the first few weeks. The catheter should be irrigated several times daily and changed once or twice weekly to avoid plugging of its lumen by excessive deposition of calcium. The catheter should be connected with a closed system of drainage, all the tubes and bottles should be carefully sterilized, and all irrigations should be done with thorough aseptic precautions. A liberal intake of fluids and a diet containing extra protein, or use of protein supplements given intravenously, are usually necessary. In men, injection of testosterone may enhance the metabolism of protein.

An excretory urogram should be made as soon as it fits into the rest of the program. The possibility of formation of calculi in the kidneys and ureters must be borne in mind. If fever develops, it is usually caused by obstruction somewhere in the urinary tract. Relief of the obstruction might require only better attention to the catheter; if obstruction is caused by a stone in the upper part of the urinary tract, ureteral catheterization might be necessary to dislodge the stone.

Nesbit and Gordon [10] proposed that neurogenic vesical dysfunction be divided into four groups. Emmett and associates [11] listed six types in their classification. Jacobson,[12] after studying a series of 16 dogs in which he had produced cord bladders by the section of certain terminal nerves or of the spinal cord at various levels, proposed three types: (1) the atonic bladder, (2) the autonomous bladder, and (3) the automatic or reflex bladder.

In attempting to classify any dysfunction or to predict the type of functioning bladder that a patient might ultimately have, I consider that the most important thing to remember during the first stage of recovery is that it is often impossible to be sure how completely the nerve tracts have been interrupted. This is true even with the advantage of examination of the damaged spinal cord during laminectomy. Impairment of the transmission of impulses might be only temporary, as the result of spinal shock; what appears to be hopeless paralysis can disappear.

As the months go by after injury, the physician with great optimism repeatedly tests the patient to note to what level sensory and motor functions descend. The urologist unavoidably becomes interested in sensory dermatomes, as well as which nerves supply the various muscles of the abdomen and extremities. But during these early months, he will generally confine his urologic efforts to the care of the catheter and the judicious use of urinary antiseptics or antibiotics. These should be employed only during febrile periods, for they will not sterilize the urine while the catheter remains in the urethra. The constant prophylactic use of an antiseptic, even extremely small doses, is unwise practice.

INTERMEDIATE STAGE OF RECOVERY

Depending on the severity of the initial lesion and how well complications have been avoided, the patient might recover considerably within three or four months. The location of the lesion, as well as whether it has caused complete or incomplete transection of the spinal cord, now becomes important.

It has long been recognized by physiologists, anatomists, and urologists that the center for micturition is located in the conus medullaris, in the terminal portion of the spinal cord just above the cauda equina at the level of the 12th thoracic and first lumbar vertebrae. Bors [9] stated that "neurogenic bladders resulting from lesions above the conus differ functionally from those with lesions at or below the conus." In his experience with 623 patients who had injuries to the spinal cord, those who had no evidence of injury to the conus had reflex or automatic bladders, in a great percentage of instances. In contrast, when the injury damaged the conus or cauda equina or both, a nonreflex type of bladder almost always resulted. The experience of most urologists who have observed a large number of patients who have neurogenic bladders coincides with that of Bors.

When rehabilitation has reached the stage of ambulation, removal of the catheter can be considered to determine what type of vesical function, if any, has returned. At this time it is usually best to perform a cystoscopic examination to determine whether fragments of stone have formed in the bladder. If any such fragments are present, they can be crushed and removed with a forceps. The patient is then allowed to go without a catheter for two or three hours. If an automatic bladder has developed, the patient will void during that time, provided that the intake of fluid is sufficiently liberal. An efficient automatic bladder will expel the urine forcefully; no residual urine will be found, or at most 1 or 2 fluid ounces (about 30 or 60 cc.) may be present. Catheterization should be done to determine the presence or absence of residual urine.

In the patient whose injury is at or below the conus, the so-called cauda equina lesion, the urine is not, as a rule, expelled automatically. The patient usually notes a sense of fulness or distention; if instructed to strain the abdominal muscles, the patient often can initiate urination. Sometimes the first efforts are a failure and it is

10. Nesbit, R. M. and Gordon, W. G.: Neurogenic Bladder, Pennsylvania M. J. **43**:1261-1268 (June) 1940.

11. Emmett, J. L.; Albers, D. D., and Anderson, R. E.: Statistical and Analytical Review of Final Results of Transurethral Resection for Cord Bladder, J. Urol. **65**: 36-59 (Jan.) 1951.

12. Jacobson, C. E., Jr.: Neurogenic Vesical Dysfunction: Experimental Study, J. Urol. **53**: 670-695 (May) 1945.

necessary to reinsert the catheter for another week or two of drainage. When the patient can accomplish urination and can pass 8 to 10 fluidounces (approximately 240 to 300 cc.) or more in one voiding with little or no residual urine, vesical function can be regarded as efficient.

The patient who sustains injury to the cervical portion of the spinal cord and who has quadriplegia persisting for many months gains little if an automatic bladder develops. In most cases it is preferable to continue with drainage by means of an inlying catheter; however, if there are enough nurses available to manage the urinal, the male patient may prefer to use it rather than the catheter.

That the situation is not always hopeless in cases of prolonged paralysis caused by injury to the cervical portion of the spinal cord is illustrated by a patient who was treated some years ago. This man had a broken neck, and after three months he could barely move his hands. He could walk after nine months, although his gait was spastic. He did not have an automatic bladder, but he voided voluntarily with great effort. I performed a transurethral resection 27 months after the injury; since that operation, the patient has been able to void easily in large amounts and has good control.

Some urologists use the cystometer to measure the force exerted by the vesical wall or make cystometrograms to obtain a certain pattern of vesical activity before the patient is allowed to go without a catheter and make his first attempts at voiding. I have not used this refinement but instead have observed the patient carefully during the first few hours after removal of the catheter; no adverse effects have been noted from omission of cystometric study.

LATE STAGE OF RECOVERY

When six months have elapsed after injury to the spinal cord, it might be said that the late stage of recovery has been reached. As previously stated, this is an arbitrary interval and not one on which any firm convictions as to alteration of therapy can be based. Depending on the patient's general condition, the same therapeutic methods might be continued for several additional months. Those patients whose progress has been slow and in whom reasonably efficient vesical function has not developed should then be reexamined carefully. Another excretory urogram should be made, with a search for stones or evidence of severe infection. Cystoscopy should be repeated and the appearance of the vesical neck and wall carefully noted. Any calculi found in the bladder that might not have been detected by the urogram can be removed. Cystitis of important degree may be found and remedial measures can be instituted. This additional therapy is sometimes sufficient for the restoration of the proper balance in the detrusor-sphincter mechanism.

Patients who are recovering from a lesion of the cauda equina have been helped by proper instruction concerning urinary habits. If they attempt to void at regular intervals and do not permit the bladder to become overdistended, they often do extremely well. This might be called "urination by the clock." Some patients are assisted by a canvas band that is placed around the waist; this band provides support for the abdominal muscles when the patient tries to urinate and gives him something to push against. Some patients void much better in a sitting position than when they are standing. Some are helped by additional pressure applied to the abdomen with their hands. These are only a few of the methods that may be useful. Sometimes the patient himself will discover a unique method to assist in urination.

When other methods are not successful in restoring vesical function, reexamination of the neck of the bladder should be done with a view to the possibility of reducing its resistance to the forces of the detrusor muscle and the abdominal muscles by resection of a portion of the vesical outlet. Cystoscopy has revealed trabeculation of the

Fig. 1.—Cystogram of a typical cord bladder.

vesical wall in many instances of neurogenic vesical dysfunction (fig. 1). Furthermore, if during cystoscopy the vesical neck is observed carefully during overdistention, it will usually be seen that the so-called internal sphincter undergoes spasm, during which it may narrow to a fraction of its original diameter (fig. 2). This is evidence of imbalance of the intrinsic mechanism.

Jacobson sectioned the right pelvic nerve in a dog and produced unilateral hypertrophy (right) of the vesical musculature. The exact cause of this hypertrophy is not known; however, it would appear logical to assume that it is produced by imbalance of the nerve mechanism. When the upper or detrusor portion of the bladder contracts and attempts to expel urine, the sphincteric portion should relax but instead it becomes spastic and resists the outflow of urine. Inevitably this leads to thickening of the detrusor muscle, formation of cellules and diverticula, and finally to back pressure on the ureters and renal pelvis.

Bors, in discussing transurethral resection, stated: "large surveys from Veterans Administration Hospitals demonstrate that the method was used in from 11.4 per cent to 20.4 per cent of cases." Among the 623 patients observed by Bors, 71 underwent transurethral resection; good results were obtained in 95.8%. However, in 22 patients transurethral resection was supplemented by pudendal anesthesia, pudendal neurectomy, or subarachnoid alcohol block. Transurethral resection was employed in 57.8% of the series of 101 cases of cord bladder that have been reported previously by my group.[6] The operation failed in only 1 of these 58 cases and it is my opinion, in retrospect, that, if supplemental pudendal neurectomy had been performed, it would have been helpful in this case.

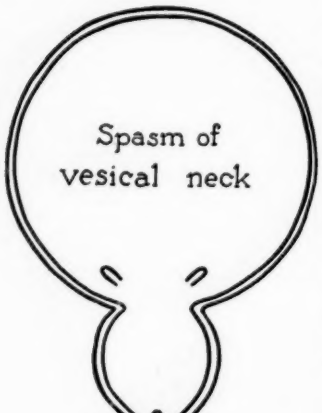

Fig. 2.—Typical spasm of the vesical neck in cord bladder.

Transurethral resection is indicated in the treatment of any patient who has a cord bladder and who has repeated episodes of infection in the urinary tract or who has extreme difficulty in voiding. A substantial amount of residual urine is almost always found. It is for this reason that infection occurs. Formation of calculi in the bladder and eventually in the upper part of the urinary tract will almost certainly result. The following case illustrates the value of transurethral resection of the vesical neck combined with other methods of physical rehabilitation.

REPORT OF CASE

In November, 1945, a 31-year-old white man fell five stories and suffered fracture of the 12th thoracic and first lumbar vertebrae, the pelvis, both ankles, and several ribs. He was paralyzed below the hips and was incontinent of urine and feces. Treatment was carried out in a hospital in Norway until April, 1947, when he was brought on a stretcher to the clinic. Considerable recovery of nerve function had already taken place by this time, but there was still paralysis of the sacral and lumbar nerves below the level of the second lumbar segment.

Roentgenograms revealed extensive osteoporosis of the lumbar portion of the spinal column, the pelvis, and the femurs, in addition to the fractured vertebrae. Bilateral staghorn calculi were present in the kidneys, together with multiple small calculi along the course of each ureter and multiple vesical calculi. Incontinence of the dribbling overflow type was observed; however, the patient was able to force out a few fluidounces of purulent urine by straining with the abdominal muscles.

Excretory urography revealed moderate dilatation of both renal pelves and the calices. Cystoscopic examination at first glance showed the vesical neck to be widely dilated; some relaxation of the external sphincter was observed. The vesical calculi were crushed, and the fragments were removed. Inspection of the vesical neck with a retrograde lens revealed that there was a curtain of hypertrophied tissue projecting down from the anterior half of the neck when the bladder was overdistended. The posterior lip of the vesical neck did not appear to be thickened or elevated, and no bar was present.

By means of the Thompson resectoscope, 2 gm. of tissue was removed in multiple pieces from the anterior half of the neck between the 9 o'clock and 3 o'clock positions. No tissue was removed from the posterior lip, which was not incised. The pathologist reported the removed tissue to be inflammatory muscle. Postoperative drainage by means of a catheter was continued for 72 hours. After removal of the catheter, the patient was able to void quantities of urine ranging from 100 to 250 cc.; catheterization after voiding disclosed no residual urine, whereas the preoperative residual urine had measured 300 cc.

A program of general rehabilitation was then instituted, during which all osteoporosis of the bones disappeared and the renal and ureteral calculi disintegrated and were passed in multiple small fragments. Muscular strength gradually returned to the upper parts of the legs, and the patient was taught to walk, first with the use of crutches and later with glider canes, after many months of graduated effort.

Vesical function improved so that he could retain several hundred cubic centimeters of urine and had no incontinence. By this time ambulation had improved so much that he was discharged from the hospital to live in an apartment. He finally purchased an automobile, drove it to New York, and returned to Norway. He resumed his former occupation as manager of several stores and has since remained in good health. Final excretory urograms revealed normal renal function; no stones were visible in any portion of the urinary tract. Results of urinalysis and of urinary cultures were within normal limits.

COMMENT

Of greatest importance in the recovery of this patient was the physical therapy that was received over a period of many months. This was made possible, however, by correction of the disorder of the urinary tract, because prior to such correction repeated episodes of fever and chills had had the effect of so weakening and demoralizing the patient that he had almost lost all hope for recovery.

The degree of improvement just described is not unique. It has been observed in a large number of patients who have had the advantage of team therapy.

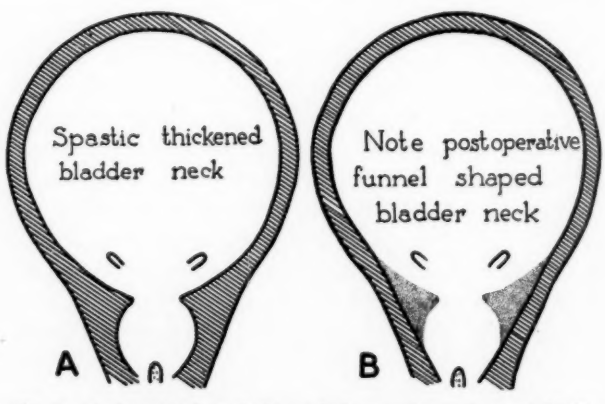

Fig. 3.—*A*, hypertrophy of the vesical musculature in cord bladder. *B*, funnel-shaped vesical neck resulting when the hypertrophied portion of the vesical neck (shaded part) is removed.

Such patients have not been forced to put up with a poorly functioning bladder that retains a large quantity of infected urine. A bladder that cannot empty is an extremely inefficient reservoir for urine. Its capacity obviously is reduced not only by the imbalance of the muscles but by the infection that supervenes and makes it irritable. Many patients who have neurogenic vesical

dysfunction experience repeated relapses of infection that are relieved by the intermittent use of an inlying catheter. Some ultimately are advised by their physicians to have permanent suprapubic cystostomy, which in my opinion should be used only in the treatment of patients who have paralyzed arms and cannot help themselves.

The use of transurethral resection of the vesical neck as a means of relieving any patient who has long-standing neurogenic vesical dysfunction should be seriously considered. The fear that incontinence might be increased by the operation has little basis in fact. The external sphincter is not disturbed if the operation is performed properly. Resection of tissue is confined to the vesical neck and prostatic region; the external sphincter is not cut or weakened in any way (fig. 3). I have questioned a number of urologists who have had extensive experience in transurethral operations; they agree that incontinence is corrected by transurethral procedures in the great majority of cases. There are a few patients whose vesical function is of the automatic type who will at times soil themselves if they do not watch the clock and correctly time the interval between urinations. As a rule, these are patients whose neurological defects are above the conus.

The results of transurethral resection are best in those patients whose original injuries occurred at or below the conus. Recovery of nerve function in many is relatively complete; some have only a defect in the sacral nerves, with resulting saddle anesthesia or minimal weakness of the muscles that control the feet. Transurethral resection has restored voluntary urination in many such patients who prior to operation could not void at all and had been forced to catheterize themselves regularly for periods ranging from many months to, in one case, 16 years.

It should be emphasized that many patients who sustain injuries to the spinal cord will spontaneously recover a satisfactory type of vesical function without the help of transurethral operations. In these patients, the bladder empties all but 1 or 2 fluid ounces (about 30 to 60 cc.); the urine remains entirely clear, or extremely rare episodes of cystitis may occur. These patients will do well and require, at most, only periodic chemotherapy to control the mild attacks of infection.

I wish to emphasize again that patients who have long-standing injuries to the spinal cord and who experience repeated attacks of infection of the urinary tract, who cannot void with a satisfactory, uninterrupted stream, with average effort, or who have a distressing incontinence, should be given the advantage of careful survey by a urologist who is skilled in transurethral procedures. Deformities of the vesical neck that can be corrected by transurethral resection will be found in a great percentage of such patients. The disability that these persons experience can be reduced appreciably or eliminated entirely by operation.

SUMMARY AND CONCLUSIONS

Cord bladders should be classified only on the basis of whether they are efficient or inefficient. An efficient cord bladder is one that the patient can empty or nearly empty. Long periods of continence are observed between urinations. Pyuria is absent or minimal. Stones do not form in the bladder or upper part of the urinary tract. Febrile attacks occur rarely if at all. An inefficient cord bladder is one that does not empty. As a rule, it retains 5 fluid ounces (about 150 cc.) or more of residual urine, which is usually infected. The patient is wet most of the time or has an extreme urgency type of incontinence. Stones are sometimes present, and febrile attacks occur frequently. Transurethral resection of the vesical neck can often convert an inefficient cord bladder into an efficient one.

CLINICAL MANAGEMENT OF URINARY RETENTION IN CHILDREN

Tracy O. Powell, M.D., Los Angeles

Pronounced urinary retention (megalobladder) in children is related in most cases to congenital lesions of the urogenital tract. The majority of these lesions are neuromuscular in origin. Effective treatment depends on accurate evaluation of the cause. Unless prompt and adequate urologic treatment is instituted, however, profound damage to the kidneys, with resultant shortening of the child's life, can ensue. This problem is encountered frequently in large pediatric clinics. The present study reviews the mechanics of urinary retention, describes a plan of examination that has proved useful in determining the type of retention in the particular case and its cause, and discusses treatment.

Although in many cases of pronounced urinary retention neurologic lesions may not be demonstrable, I am convinced the majority are of neurogenic origin. Etiological factors in neuromuscular dysfunction of the bladder in children include the following lesions:

Neuromuscular Lesions.—Neuromuscular lesions may be extrinsic to the musculature of bladder (including both upper and/or lower motor neuron lesions). Such lesions may be associated with cerebral palsy, cord bladder, spina bifida with meningocele, anomalies of the spine and sacrum, poliomyelitis, arachnoiditis, and tumors. Lesions intrinsic to the musculature of the bladder may be associated with Hirschsprung's disease, decreased numbers of ganglions (as demonstrated by neurohistological studies), and pseudovalves (indicating some type of nerve lesion).

Mechanical Obstructions.—Mechanical obstructions may be due to pinpoint meatus, urethral stricture, contracture of the vesical neck, ureterocele, giant verumontanum, or true valves, without infection. Severe infection in conjunction with any of these obstructions may produce atony of the bladder, which is often similar to that of neurogenic etiology. The etiologic factor of prime significance in the lesion with which this paper is concerned, megalobladder, is the intrinsic neuromuscular lesion. Incidentally, this vesical condition should not be

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confused with cord bladder, the cause of which is related to lesions extrinsic to the vesical musculature.

Minor mechanical obstructive lesions, such as pinpoint meatus, urethral stricture, and even contracture of the vesical neck, are fairly easy to diagnose; they rarely produce the extreme variety of retention and vesical distention so hard to manage clinically. Correction or removal of such minor lesions generally will effect permanent relief. Transurethral resection of obstructive tissues about the vesical neck may be sufficient. When such lesser obstructions have caused urinary retention of long duration with pronounced infection, however, the clinical picture may resemble that of the more serious condition, megalobladder.

INTRINSIC NEUROGENIC LESIONS OF THE BLADDER

Swenson's [1] demonstration of a deficiency of ganglions in the trigone and near the ureteral orifices in megalobladder is especially significant. Whether or not his preliminary observations will be confirmed by studies in large groups remains to be learned. Certainly, clinical observations in patients with megalobladder indicate behavior similar to that in cases of urinary retention associated with Hirschsprung's disease in which there quite obviously is neuromuscular dysfunction of the bladder.

Pseudovalves.—In cases of megalobladder due to intrinsic neurogenic lesions of the bladder, it appears on cystographic and cystoscopic examination that the dome and the main portion of the detrussor lack stimuli arising from the trigonal level. The mechanism of voiding seems

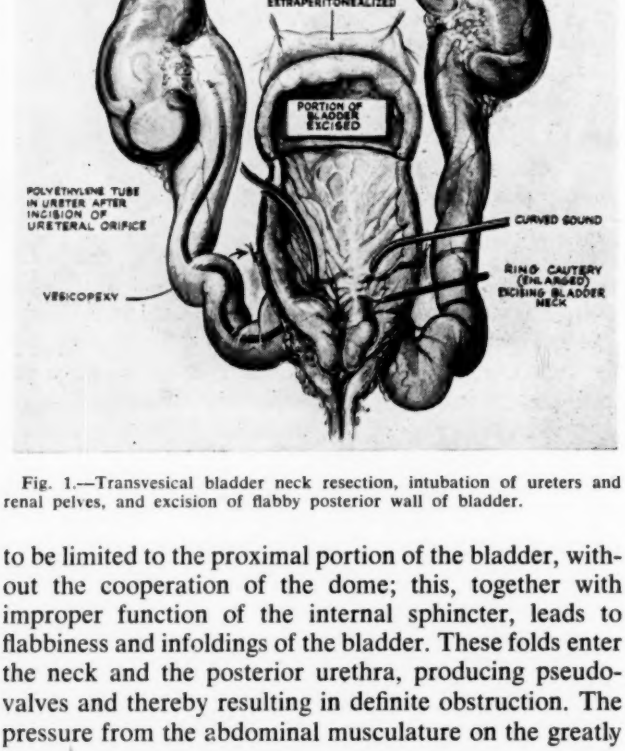
BLADDER IS EXTRAPERITONEALIZED
PORTION OF BLADDER EXCISED
POLYETHYLENE TUBE IN URETER AFTER INCISION OF URETERAL ORIFICE
CURVED SOUND
RING CAUTERY (ENLARGED) EXCISING BLADDER NECK
VESICOPEXY

Fig. 1.—Transvesical bladder neck resection, intubation of ureters and renal pelves, and excision of flabby posterior wall of bladder.

to be limited to the proximal portion of the bladder, without the cooperation of the dome; this, together with improper function of the internal sphincter, leads to flabbiness and infoldings of the bladder. These folds enter the neck and the posterior urethra, producing pseudovalves and thereby resulting in definite obstruction. The pressure from the abdominal musculature on the greatly distended bladder forces these folds further into the urethra, oftentimes dilating the posterior urethra in the male, causing depression in the posterior urethra and the neck of the bladder with relative elevation and engorgement of the verumontanum and accentuation of its frenula (fig. 1). This infolding often is mistaken for a true valve. The veru may become large enough to contribute to the obstruction.

Fig. 2.—Photograph showing the trigone of the bladder, including ureteral orifices and small ureterocele, being extruded through the urethra. The patient was a 13-month-old infant with a large, flabby, atonic bladder.

True valves are extremely rare and constitute a permanent obstruction. Bell [2] has mentioned that in 32,360 postmortem examinations only 3 instances of a true valve formation were found. In none of the 30 cases of huge megalobladder and megaloureter did he find any evidence of valves or other obvious obstructions. In a review of the pathological diagnoses in the leading hospitals of Los Angeles, including the Los Angeles General Hospital, such valves were found to be extremely rare indeed.

The occurrence of pseudovalves as a clinical condition, however, is relatively common in my opinion. Their importance as an obstructive urologic lesion needs emphasis. Pseudovalves may be observed clinically; however, at autopsy such formations have been obliterated, since the bladder has become fixed and usually has assumed its normal contour as a result of being empty.

Some of the patients with pseudovalve formation observed on the clinic service at this hospital had previously been examined cystoscopically by competent urologists of wide experience and their lesions had been diagnosed as true valves. In some of these cases, on opening of the posterior urethra retropubically, before any instrumentation could have obliterated the valves, large folds entering the posterior urethra were found, whereas true valves could not be demonstrated.

Vesical Extrusion Through the Urethra.—In the female the musculature, as well as the mucosa, of the megalobladder may pass through the urethra and even appear externally. In three cases a small ureterocele was extruded through the urethra. This became increasingly distended with urine, giving rise to a mechanical traction device that, on aggravation by the baby's crying and by the pressure of the abdominal musculature, forced ever-

1. Swenson, O.: New Concept of Pathology of Megaloureters, Surgery 32: 367 (Aug.) 1952.
2. Bell, E. T.: Renal Diseases, Philadelphia, Lea & Febiger, 1946, p. 121.

sion of the bladder. Thus the entire trigone, ureteral orifices, and about half the bladder were pulled and pushed through the urethra to the outside (fig. 2). Without the ureterocele these bladders would not have remained on the outside but would have passed back through the urethra; in fact, the condition might have been missed as the obstructive cause for the urinary retention. Obviously such an extreme situation could not occur in the male.

PLAN OF EXAMINATION

Patients with intrinsic neurogenic lesions of the bladder observed in the past in many instances did not receive proper treatment owing to the inadequacy of examination. During the last five years my associate, Dr. H. H. Edelbrock, and I have developed a more thorough plan for examination that is offered as a guide to treatment.

Clinic and Office Routine.—The clinic and office routine includes a general survey, with a review of the history and physical examination. The urologic survey includes measurement of residual urine and capacity; determination of the type of infection; blood chemistry studies; intravenous urograms; and cystograms, cystometrograms, and occasionally sphincterometrograms. The neurosurgical consultation includes consideration of early surgical treatment in cases involving lesions such as meningocele and examination for disturbances of motor and sensory pathways. The neurourologic examination includes evaluation of dysfunction of the bladder accompanying lower or upper motor neuron lesions, with attention to the bulbocarvernosus reflex (S-2 and S-3), anal sphincter tone (S-2 and S-3), and anal reflex (S-5).

Hospital Routine.—In the hospital the study includes cystoscopy, retrograde pyelograms, and a barium enema. A pudendal block is performed, particularly in cases of vesical imbalance associated with upper motor neuron lesions.

CLINICAL OBSERVATIONS IN FIFTY CASES

More than 50 cases of megalobladder now have been studied. In every instance a large, flabby bladder obstructed the outlet and had produced changes due to back pressure, such as huge ureters and very severe hydronephrosis. To one not familiar with this type of case, it is almost unbelievable that children of 8 or 10 years could have renal pelves that hold 300 or 400 cc. each, ureters as large as the small bowel, and bladders that hold 1,000 to 1,200 cc. Yet in such cases an ample vesical outlet could often be demonstrated in that an adult cystoscope could be readily introduced through the urethra.

I am of the opinion that the obstructing mechanism is functional, being due to extrusion of folds of the vesical wall into the neck and the urethra. There appear to be all gradations of severity, from extreme cases to those in which there are minimal folds at the vesical neck that may or may not obliterate the outlet.

Although this discussion does not embrace cord bladder, some of the principles in management of that lesion have proved useful in cases in which folds at the vesical neck are minimal and detrussor function exists. If detrussor activity can be stimulated to produce pressures above the sphincter tone, a training program often will develop a satisfactory automatic bladder. Likewise in cases of flaccid vesical sphincter and atonic bladder, suprapubic massage with pressure (Credé) may produce a surprising degree of urinary continence. Dr. Ernest Bors [3] helped in formulating the plan of examination and his discussion of technique involved in these training procedures should be consulted. Following is a report of a case from our series in which this plan was used.

REPORT OF A CASE

Examination.—A boy, aged 3 years 8 months, was examined in December, 1947. The neurological history revealed that he had congenital hemisacrum with pes cavus of the left foot. There was a urologic history of urinary retention with chills and fever. The pain sensation was absent at the S-2 and S-3 levels on the left, and the touch sensation was diminished at the same levels. There was no Babinski reflex. The ankle jerk was absent on the left. The knee jerk was present bilaterally, and the cremasteric reflex was absent bilaterally. The bulbocavernosus reflex was positive, and the anal tone was good. Sphincterometry always revealed increased tone. Cystometry revealed that the bladder was initially atonic, then hypertonic after suprapubic resection. The tone was near normal at the last examination, after pudendal neurotripsy, with a few detrussor waves. Intravenous and retrograde pyelograms revealed bilateral pyelectasis and ureterectasis. Cystoscopy showed a bladder neck of the iris diaphragm type, with infolding of the vesical neck into the prostatic urethra. The barium enema revealed no abnormalities.

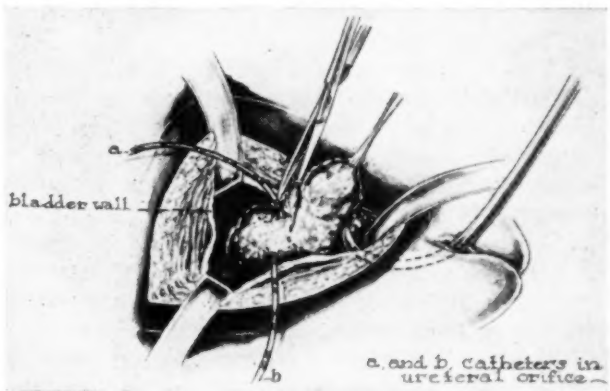

Fig. 3.—Redundant portion of trigone and bladder neck being resected in an infant.

Treatment by Open Resection.—In 1947 the child was incontinent and his bladder was distended. The capacity was 740 cc. There was 460 cc. of residual urine. In 1948, after the first resection, he was incontinent, with spasms of the bladder. The urine constantly showed evidence of infection. The capacity was 215 cc., with 170 cc. of residual urine. In 1950, after the second resection, he had the same symptoms. The capacity was 120 cc., with 90 cc. of residual urine.

Treatment by Pudendal Neurotripsy.—In 1951, before pudendal block, he strained to void. The bladder capacity was 120 cc., with 90 cc. of residual urine. After pudendal block, the patient voided easily. The capacity was 120 cc., with 2 cc. of residual urine. In 1951, after pudendal neurotripsy on the right side, his condition had improved. At the last examination he was continent, with a capacity of 320 cc. and only 15 cc. of residual urine.

When pudendal block was finally carried out in this child, the results indicated that pudendal neurotripsy probably would be of definite benefit. Accordingly, neurotripsy was done by Bors according to the technique

3. Bors, E.; Comarr, A. E., and Moulton, S. H.: Role of Nerve Blocks in Management of Traumatic Cord Bladders, J. Urol. **63**: 653 (April) 1950.

of Huggins, Walker, and Noonan,[4] effecting complete elimination of obstruction and reducing residual capacity. Had pudendal block been done at the time of the initial examination, this child would have been spared almost four years of morbidity.

Very few patients in this category, however, have come to our attention; usually in this type of case there are associated bony anomalies such as hemisacrum. In a number of instances good response to repeated pudendal block has been exhibited. A more lasting effect may be accomplished by repetition of the block, eliminating the necessity for neurotripsy.

SURGICAL TREATMENT

Minor vesical infoldings and contracture of the neck of the bladder, with but minimal damage to the upper urinary tract, may be amenable to transurethral resection. For more pronounced obstructive types of change, particularly the large, flabby bladders with huge irregular, distorted ureters and hydronephrosis, an effective plan of surgical treatment has been designed (fig. 1).

The bladder is approached through a transverse incision just over the pubic bone; the vesical neck and posterior urethra are opened as in retropubic prostatectomy. The large mucosal folds of the bladder are trimmed away, and the entire internal sphincter is enlarged by the electrosurgical loop. In some instances the amount of loose tissue in the region of the trigone is too great for resection with the electric loop but can be completely resected with knife and scissors and the cut edges resutured (fig. 3). In the majority of these patients the ureteral orifices are patent, and reflux is common; therefore, resection of the ureteral meatus is of little or no consequence. By use of male sounds corresponding in size to the enlarged ureters, patency of the ureters from the bladder to the renal pelves can be determined. If

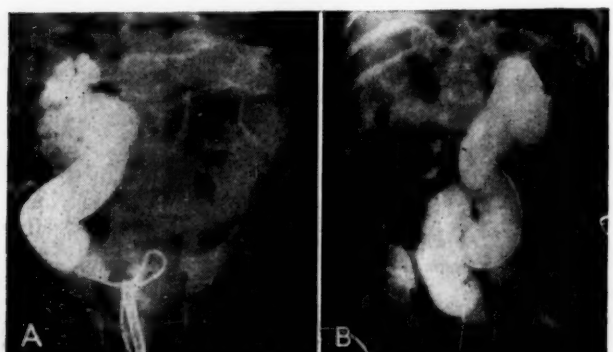

Fig. 4.—*A*, pyeloureterogram showing dilatation of the upper urinary tract on the right side in an infant of 2½ months. *B*, pyeloureterogram showing more pronounced dilatation of the upper urinary tract on the left side in the same infant.

any degree of stricture is evident, dilation by manual manipulation of the ureter retroperitoneally over the dilating sound can be effected. An extremely long and tortuous ureter can be shortened by the "pull-through" operation. Completion of these procedures permits intubation of the enlarged ureters up into the renal pelves with no. 12 or no. 14 Levin tubes or, if preferred, polyethylene tubing. At the ureteral orifices the tubes are fastened by no. 0000 chromic surgical suture, brought out through small stab wounds on each side of the bladder, and thence brought through the incision. The superior half of the greatly enlarged bladder is resected, so that essentially a hemicystectomy is done. Often a few sutures are taken on each side of the bladder near the ureteral orifices to prevent the bladder from folding in at the neck. A Foley catheter of suitable size is left within

Fig. 5.—Bilateral pyeloureterogram in the infant shown in figure 4, a year following the operation, except that the right ureter was used as a control and was not intubated. Note the remarkable improvement, particularly of the left ureter and pelvis.

the urethra and entering the bladder but in boys never is pulled into the fossa. Small pieces of absorbable gelatin sponge (Gelfoam) are placed around the urethral catheter in the open vesical neck. The catheter is pulled taut, but no tension is left on the catheter. Bleeding is completely controlled by electrocautery at the time of resection. The bladder is closed tightly in two layers. A Penrose drain is left in the wound down to the bladder. The fascia and muscles are closed in layers.

Minimal irrigation is permitted, and only sterile isotonic sodium chloride solution is used. The tubes within the ureters are left in place for two to six weeks, and irrigation is limited to an amount necessary to assure their being kept open. When there are advanced pathological changes in the upper urinary tract, if the splinting tubes have been properly placed and their positions maintained, it is advisable (convenience and expense permitting) to prolong the period of ureteral intubation. Regeneration of the kidneys in young babies following relief from pronounced obstruction can be remarkable (fig. 4 and 5). Such profound changes as illustrated obviously would not be expected in older children in whom infections have become chronic and extensive fibrosis exists. This one combined operation makes possible elimination of mul-

4. Huggins, C.; Walker, A. E., and Noonan, W. J.: Sympathetic and Pudendal Neurectomy for Vesical Atony, J. Urol. **41**: 696, (May) 1939.

tiple individual surgical procedures such as nephrostomy, ureterostomy, ureteroplasty, permanent cystostomy, transurethral resection, and use of permanent catheters.

SUMMARY AND CONCLUSIONS

In infants and children with retention of urine it is imperative that immediate drainage be instituted to avoid damage to the kidneys. Drainage should be maintained until a complete examination has been carried out and treatment of the essential lesion is under way. In most instances a retention catheter is necessary.

The majority of such patients suffer from congenital neurogenic anomalies of the vesical musculature. When the bladder is large and flabby, vesical folds may obstruct the neck, producing changes in the upper urinary tract due to back pressure. This clinical entity as referred to here is termed megalobladder for lack of a better term, and is to be distinguished from cord bladder. In some instances these folds extend into the urethra and may be mistaken cystoscopically for true valves. The frequent occurrence of such obstructive folds, referred to as pseudovalves, and the rare existence of true valves are emphasized. In girls the vesical folds may extrude through the urethra; if ureterocele exists, the bladder as well as the lower ends of the ureters may be extruded.

A plan for examination is presented that facilitated diagnosis and permitted more specific choice of treatment in 50 cases of pronounced urinary retention in children. In a few cases pudendal block and pudendal neurotripsy were of diagnostic and/or curative value; in the majority surgical treatment was necessary.

The aim of surgery is to promote urinary compensation as quickly as possible. Transurethral resection of vesical folds (pseudovalves) was effective in minor degrees of obstruction. An operation combining resection of excess tissue at the neck, manipulation and/or shortening of ureters, ureteral intubation and resection of the superior portion of the bladder—in some instances, hemicystectomy—was useful. It permitted elimination of multiple individual surgical procedures, an important consideration in view of the advanced pathological changes in these critically ill children.

Careful management postoperatively, regardless of the type of surgical treatment, is of extreme importance. Adequate drainage must be maintained until the urinary tract can become compensated. It may be necessary to retain the catheter, suprapubic cystostomy, or nephrostomy for months or years.

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ANATOMY AND NERVE SUPPLY OF URINARY BLADDER

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The anatomists have described the human urinary bladder as a pear-shaped structure made up of an external longitudinal layer of muscle fibers, a middle circular, and an inner longitudinal layer extending from the ureteral orifices down into the urethra. These fibers can be traced to the area about the verumontanum in the male bladder and to the vicinity of the external sphincter in the female. This layer of muscle fibers is easily dissected free from the underlying muscle fibers and is usually called the trigone. We have found the two remaining layers not to be distinct but to consist of freely interlacing muscle fibers, and we prefer to designate them as the detrusor muscle of the bladder.

Scher [1] has recently described "right and left lateral muscle bands which are more distinct and separate than the trigone muscle." These bands are described as originating in the posterior wall of the bladder and passing over the lateral wall of the bladder and the internal vesical orifice, through the prostatic urethra in the male and deep urethra of the female, to the region of the external sphincter. We have noted condensation of fibers that suggests what Scher has described; however, we have always found that the fibers are not a distinct structure but interlace with other fibers. They are not a separate structure comparable to the trigone muscle.

ANATOMY AND EMBRYOLOGY

The urinary bladder is primarily a hindgut derivative, as are the posterior urethra in the female and the prostatic urethra in the male. The exception is the trigone muscle, which is of wolffian duct derivation. The nerve supply of the bladder and posterior urethra is chiefly of sacral origin. The trigone is the exception, deriving its innervation from the hypogastric, or sympathetic, nerves. At the urologic seminar of the south central branch of the American Urological Society recently, Patton stated he found the bladder wall continuous with the prostate and without a fibrous separation. He stated he would not expect a fibrous septum, because fibrous tissue implied stress. He stated that, when muscle fibers in vitro were subjected to pull or stress, fibroblasts were promptly layed down.

We have previously described the prostate as the glandular portion of the bladder neck. We pointed out in 1944 [2] that, in 4th to 7th month embryos, the glands in the bladder neck are nearly as numerous and well developed in the female as in the male. After the 7th month, there is a regression of the glands in the female. The fibrous septums, which have been interpreted as septums between lobes of the prostate, are fibrous bands resulting from contractions of the trigone in opening the internal vesical orifice during urination.

From the Southwestern Medical School of the University of Texas (Dr. Duncan).

Read in the Symposium on the Neurogenic Bladder before the Section on Urology at the 102nd Annual Meeting of the American Medical Association, New York, June 3, 1953.

1. Scher, S.: Some Observations on Anatomy of Bladder Neck and Posterior Urethra with Reference to Prostatic Observation, Brit. J. Urol. **22**: 116-124 (June) 1950.

2. Van Duzen, R. E.: The Glands of the Female Urethra, Urol. & Cutan. Rev. **48**: 363-364 (Aug.) 1944.

As we pointed out earlier in this paper, the detrusor muscle and the prostatic urethra are innervated by the parasympathetic or sacral nerves, the nervi erigentes, arising from the sacral segments 2, 3, and 4 of the spinal cord. The trigone, having been derived from the wolffian duct, receives its nerve supply from the hypogastric, or sympathetic, nerves, which have arisen from a higher segment of the embryo.

The center in the brain for urination is located in the preoptic region of the hypothalamus. Stimulation of this region results in the contraction of the bladder wall and emptying of the bladder. It is believed that a pathway leads backward from this center through the hypothalamus and finally passes, perhaps, in the ventrolateral white column of the cord to end on cells in the gray column at the level of S 2, S 3 and S 4. The main group of fibers seem to end on S 3, as they apparently constitute the greater portion of the fibers forming the pelvic splanchnic nerve, or the nervi erigentes. It is well to state, however, that the exact pathway through the brain stem and cord has not been definitely established at this time.

We believe much of the confusion about the act of urination woud cease if it was recognized that the muscular wall of the bladder and the posterior urethra in the female, and the prostatic urethra in the male, is a continuous structure.

THE ACT OF URINATION

Young [3] first suggested in 1918 that the trigone helped to open the internal vesical orifice. He stated: "This brings up the question of the part taken by the trigone in the act of urination. It seems to me to indicate that one function of the trigone is to pull open the interior sphincter of the bladder. I have long held to this view, as I have frequently observed, during cystoscopy, that if violent desire to urinate came on, the trigone would contract greatly and the prostatic orifice would open widely. The median, posterior portion being apparently drawn backward by the muscle fibers which run from the trigone down in the posterior urethra, and which were seen to contract violently. The opening of the internal sphincter during urination will have to be viewed, therefore, not as an inhibitory action, as heretofore, but as the result of the contraction of the powerful trigonal muscle, which passes in the form of an arc through a weaker muscle of circular shape (the vesical sphincter) and pulls it open when it contracts."

In a previous paper,[4] one of us (R. Van D.) has described his conception of the act of urination. It is an elaboration of that advanced by Young and his coworkers, Wesson,[5] and Macht.[6] According to this theory, the phases of urination are as follows. 1. The first act of urination is the contraction of the trigone. This depresses the posterior lip of the internal vesical orifice. 2. The next stage is a wave of contraction in the detrussor muscle, starting in the region of the internal vesical orifice and extending backward toward the dome of the bladder. This contraction wave, as we have previously pointed out, causes a lateral pull on the internal vesical orifice, further opening it. This should be remembered because the trigone is supplied by the sympathetic nerves and the detrusor muscle by the parasympathetic, or sacral, nerves. If the trigone is paralyzed by section of the sympathetic nerves or by drugs, the first act of urination, that is, the depression of the posterior lip of the internal vesical orifice, is omitted. The detrusor muscle must open the internal vesical orifice by lateral pull on the circular fibers about the internal vesical orifice and by increasing intravesicular pressure. In such cases we see hypertrophy of the detrusor muscle fibers, indicating it is not so effective as the normal mechanism. When the detrusor muscle is paralyzed, there is no tonicity of the bladder and there is no expulsive force; hence there is complete retention. Later the intrinsic nerve control manifests itself and the bladder tonicity returns to some extent. 3. The last phase of urination consists of contraction of the abdominal muscle and increase in the intra-abdominal pressure. In contrast to these conditions, there may be hypertonicity of either muscle. By the combination of an abnormal physiological state of one muscle with a normal or abnormal state of the other, various conditions are produced, giving a diverse chain of symptoms. Only by determining which muscle or what nerves are affected is rational treatment possible. There has been considerable discussion as to whether there are dilator fibers in the bladder. We recently saw a patient who did not empty his bladder when the cystoscope sheath was in the bladder. Pressure was applied over the suprapubic region and about 400 cc. of urine was expelled. On release of the suprapubic pressure, air was heard to pass into the bladder. A roentgenogram showed a bladder filled with air. This would be interpreted by many to demonstrate dilator fibers. However, this has been relieved by giving methacholine chloride. What was the cause of the negative pressure in the bladder? We feel it is due only to negative intra-abdominal pressure with a weak detrusor muscle.

In 1936 one of us (R. Van D.), with Looney,[7] pointed out that, if during cystoscopy the lateral walls of the internal vesical orifice were observed when the patient strained to void, the walls were often seen to fall away, just as contraction of the trigone depresses the floor of the internal vesical orifice. We further noted that this continued after the trigone was paralyzed by section of the presacral nerve. Scher many years later described a like observation but believes it is produced by contraction of distinct lateral muscle bands. We question only the existence of separate muscle bands.

Young in his discussion of the 1937 paper [7] states: "Dr. Van Duzen's demonstration of the part played by the lateral detrusor muscles in holding open the vesical orifice is an interesting finding, and confirms our view that the act of micturition is from first to last an active process, being initiated by the trigone which holds the neck open with the assistance of the lateral muscles, which also take part in expelling the urine with the other detrusors."

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4. Van Duzen, R. E.: Anatomy of the Prostate and Vesical Neck, South. M. J. **28**: 785-791 (Sept.) 1935.

5. Young, H. H., and Wesson, M. B.: Anatomy and Surgery of the Trigone, Arch. Surg. **3**: 1-39 (July) 1921.

6. Young, H. H., and Macht, D. I.: The Physiology of Micturition, J. Pharmacol. **12**: 329-354, 1923.

7. Van Duzen, R. E., and Looney, W. W.: Correlation of Clinical and Anatomical Studies of the Vesical Neck, South. M. J. **30**: 436-438 (April) 1937.

INNERVATION

The reports by Learmonth [8] that stimulation of the presacral nerve would contract the internal sphincter and that section of the nerve would produce relaxation of the internal vesical orifice has produced most of the confusion about the act of urination. In 1932 one of us (R. Van D.) published our observations on the cystoscopic findings after presacral neurectomy.[9] We pointed out that the trigone was paralyzed and that there was no relaxation of the internal sphincter. We further pointed out that these patients noticed a delay in initiating the act of urination and a need to strain. We also reported this was often relieved by the use of epinephrine, a sympathetic stimulant. In discussion of this observation it was suggested that we had not completely cut all the presacral nerves. Subsequent observation by others has shown that the sympathetic nerve has no effect on contracting the internal vesical orifice. We have observed the effect of stimulation of both the hypogastric or presacral nerves and the sacral nerves in the Rhesus monkey. There is little if any change when the hypogastric nerve is stimulated. If the anterior branch of the second sacral nerve is stimulated as it emerges from the sacral foramen, a wave of contraction is seen to start at the neck of the bladder, proceeding upward toward the apex, causing the bladder to elongate and rise toward the anterior wall. This is followed by a wave that passes downward, shortening the bladder, and causing evacuation. This is similar to Muellner's fluoroscopic observations in man. Heimburger, Freeman, and Wilde [10] found that the anterior root of S 3 is the dominant nerve supply in man but that S 2 and S 4 are of less importance.

CONCLUSIONS

The bladder wall consists of two groups of muscle fibers: the trigone muscle and the detrusor muscle. The trigone, innervated by the sympathetic, or hypogastric, nerve, starts the act of urination by depressing the posterior lip of the internal vesical orifice. The detrusor muscle, innervated by the parasympathetic or sacral nerves produces lateral pull on the fibers about the vesicle neck, thereby further opening the outlet, and, by a contracting wave, expel the contents of the bladder.

The muscular structure of the prostate is a continuation of the fibers of the detrusor muscle of the bladder. There is no fibrous septum between bladder and prostate. The so-called capsule of the prostate is a compression layer resulting from hypertrophy of the prostatic glands. Fibrous septums indicate stress. The septums that have been said to divide the prostatic urethra into lobes are the result of repeated contractions of the trigone.

Sectioning of the hypogastric or sympathetic nerve causes paralysis of the trigone. It does not produce relaxation of the internal vesical orifice. Sectioning of the sacral or parasympathetic nerves produces relaxation of the internal vesical orifice and paralysis of the detrusor muscle of the bladder.

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8. Rankin, F. W., and Learmonth, J. R.: Section of the Sympathetic Nerves of the Distal Part of the Colon and the Rectum in the Treatment of Hirschsprungs Disease and Certain Types of Constipation, Ann. Surg. **92**: 710-790 (Oct.) 1930. Cloake, P. C.; Learmonth, J. R., and Barrington, F. J. F.: Discussion on Innervation of Bladder, Proc. Roy. Soc. Med. **25**: 547 (Feb.) 1932.

9. Van Duzen, R. E.: Effect of Resection of Presacral Nerve on Vesical Junction, South. M. J. **25**: 964-967 (Sept.) 1932.

10. Heimburger, R. F.; Freeman, L. W., and Wilde, N. J.: Sacral Nerve Innervation of Human Bladder, J. Neurosurg. **5**: 154-164 (March) 1948.

RADICAL PROSTATECTOMY FOR CANCER

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Carcinoma of the prostate gland ranks a close third among the leading causes of deaths due to cancer in males. Radical prostatectomy for the early localized tumor is the only known method of curing patients with this disease. While all prostatic cancers are curable by surgery for a certain length of time after they first develop, they produce no symptoms during this operable stage. As a result, only a pitifully small proportion of these cancers are discovered and referred to the surgeon early enough to be cured by radical prostatectomy. The great majority (approximately 95%) are inoperable when first discovered, and the patients continue downhill to die in one to five years, despite the palliation provided by orchiectomy, estrogens,[1] or cortisone. The results from bilateral adrenalectomy have been disappointing, and it may soon be abandoned as a treatment for carcinoma of the prostate.

Radioactive isotopes, such as gold 198 and phosphorus 32, which are now being investigated, appear to have a purely local action, at least in their present form, and thus may not be curative. For patients over 70 years of age, palliation for one to five years by hormone therapy may appear to be an acceptable duration of salvage (except to the patients and their families), but such a period of palliation for men of 55 years is definitely unsatisfactory. The purpose of this paper is to restate the plea for periodic rectal examinations of all men over 50 years of age, so that early cancers of the prostate will be detected in time, and to present some helpful refinements of the retropubic technique for radical prostatectomy.

The one person who can save men with cancer of the prostate gland is the physician who does annual physical examinations. He alone has the opportunity to detect the nodules or alterations in density that usually originate, fortunately, in a position where they can be easily pal-

Read before the Section on Urology at the 102nd Annual Meeting of the American Medical Association, New York, June 4, 1953.

From the Squier Urological Clinic, Columbia University College of Physicians and Surgeons, and the Department of Urology, Memorial Hospital.

1. Nesbit, R. M., and Baum, W. C.: Endocrine Control of Prostatic Carcinoma: Clinical and Statistical Survey of 1,818 Cases, J. A. M. A. **143**: 1317 (Aug. 12) 1950.

pated on rectal examination. These suspicious areas can be biopsied with a needle, punch, or scalpel. All three methods have been recommended by experienced urologists.

It is encouraging to observe that a number of the largest automotive and industrial organizations have followed the example of the U. S. Army and have adopted a policy of routine physical examinations for their executives, realizing that many disorders, like prostate cancer, must be detected early, before symptoms develop. Once symptoms of urinary obstruction occur or the serum acid phosphatase level rises, it is usually too late for curative surgery. The recent report of Col. Joseph Kimbrough [2] shows how valuable routine examinations can be in the early discovery of prostatic carcinomas, while curative surgery can still be used.

DIAGNOSIS OF EARLY LESIONS

Palpation by rectum with the finger may reveal a nodule in one lobe of the prostate gland or abnormal firmness of one lobe as compared to the other. Either of these findings is sufficient to require a biopsy and an assay of the serum acid phosphatase. Also, if one side of the prostate gland is larger than the other, carcinoma should be suspected. Asymmetry can be caused by a prostatic abscess, but bogginess, fever, and pain are common accompaniments that are not usually present with cancer. The somewhat rare prostatic infarct may not be distinguishable from a cancer by palpation alone. Reliance on palpation alone leads to too-frequent diagnosis of carcinoma, since some cases with nodular benign hypertrophy, calculi, or tuberculosis can resemble cancer, as demonstrated by Goodwin.[3] Several supplementary diagnostic aids, such as roentgenograms, biopsies, phosphatase studies, and endoscopy, are available, however, to verify the clinical impression of carcinoma.

Palpation by rectum is important in determining whether the carcinoma is operable. Fixation, extension beyond the seminal vesicles, or induration of the periprostatic tissues suggest inoperability, but they are sometimes difficult to detect, and surgical exploration may be necessary to determine whether the growth is removable. Massive, fixed glands are definitely inoperable and amenable only to palliative treatment.

Acid phosphatase assays of the serum are of diagnostic value only when the serum level is elevated. Prostatic carcinomas that have not broken through the capsule cause no elevation of the serum acid phosphatase level, and a large proportion of carcinomas that have broken through the prostatic capsule and have metastasized still cause no elevation of the serum acid phosphatase level. When this level is elevated above 3 Gutman units per 100 cc. or 1 Bodansky unit, however, it does indicate that prostatic cancer has broken through the capsule and is no longer amenable to radical prostatectomy. Whether cures are likely to follow the shrinking of these cancers with estrogen treatment and the removal of them by radical prostatectomy has not yet been determined, although patients so treated may not subsequently suffer from obstruction of the bladder outlet.[4]

Cytological (Papanicolaou and Traut) studies of exfoliated cells in expressed prostatic secretions appear to be of little practical value in patients with small (operable) prostatic cancers, perhaps because the carcinomatous nodules lie in the periphery of the gland.[5]

BIOPSY OF THE EARLY LESION

Normal results from biopsy of a firm or nodular gland are always of doubtful value. Open perineal biopsy, even though a sizable wedge of prostatic tissue is removed, is by no means infallible. Frozen sections of tissue taken from the prostate during perineal exposure are often difficult to interpret accurately, especially if the pathologist is able to study only two or three such specimens a year. It has also been noted that the nodule that was palpated in rectal examination is sometimes difficult to locate when the gland is exposed. It also has been noted that occasionally the nodular area will yield a normal biopsy specimen whereas other areas of the prostate that felt quite normal to the palpating finger will yield carcinoma. If the frozen sections are inconclusive, Goodwin [6] and others close the perineal incision and wait for study of the permanent sections. Reoperation for radical perineal prostatectomy is not difficult if it is done within seven days after the surgical biopsy, but cutting into any cancer reduces the chances of curative surgery.

Needle biopsy or punch biopsy is much easier to do, although accuracy in hitting the affected area depends on the experience of the examiner.[7] This method has the advantage that the removed tissue can be studied on permanent sections rather than on frozen sections. Multiple specimens can be taken, and repeat biopsies are possible if doubt persists. The likelihood of producing implants of carcinoma cells in the tract of the needle biopsy has been discussed, but no cases of such implantation have been reported. Such a danger exists theoretically with every type of biopsy, but, at present, there does not appear to be any safer substitute, and spread of prostatic disease as the result of biopsies has never been demonstrated.

SURGICAL TECHNIQUES

The retropubic (or suprapubic) technique for radical prostatectomy has been gaining favor among many surgeons (Flocks,[8] Memmelaar,[9] Chute,[10] Stockwell,[11] and Millin [12]) for several reasons. 1. The region of the external sphincter is not disturbed, so that the incidence of incontinence is low following the procedure. 2. The extent of lymph node involvement can be estimated at the outset of the operation. 3. The fascia surrounding the seminal vesicles can be easily and completely dissected out, under vision, by the retropubic technique. This

2. Kimbrough, J. E.: Detection of Early Prostatic Cancer: Discussion, J. Urol., 1954, to be published.
3. Goodwin, W., and others: Methods of Diagnosis of Carcinoma of Prostate, Tr. West. Sect. Am. Urol. A., 1953, to be published.
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5. Goodwin and others.[3] Herbut, P. A.: Urological Pathology, Philadelphia, Lea & Febiger, 1952, vol. 2.
6. Goodwin, W. E.: Radical Prostatectomy After Previous Prostatic Surgery, J. A. M. A. **148**: 799 (March 8) 1952.
7. Goodwin and others.[3] Veenema, R. J.: Simplified Prostatic Perineal Biopsy Punch, J. Urol. **69**:320 (Feb.) 1953.
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9. Memmelaar, J.: Total Prostatevesiculectomy—Retropubic Approach, J. Urol. **62**: 340 (Sept.) 1949.
10. Chute, R.: Personal communication to the authors.
11. Stockwell, A. L.: Personal communication to the authors.
12. Millin, T.: Retropubic Urinary Surgery, Edinburgh, E. & S. Livingstone, 1947.

fascia is even more important as a site for early metastases than the seminal vesicles themselves, according to Jewett.[13] He found no carcinoma cells in the lumen of the vasa or vesicles in 78 specimens examined, while he frequently found cancer cells in the perivesicle fascia. Jewett reports a 50% five year survival among the patients who were operated on and in whom the rectal examination showed no evidence of extension of the tumor.

The perineal technique for radical prostatectomy is satisfactory in the hands of those who have had long training in its use. This approach has never become popular, however, despite 50 years of teaching by its advocates. It is perhaps understandable that surgeons who only occasionally perform a radical prostatectomy might prefer the more familiar suprapubic (or retropubic) route. For this reason, we attempt to describe some of the technical points that make the retropubic radical operation easier for us.

RADICAL RETROPUBIC PROSTATECTOMY

Obesity of the patient, to our surprise, has not interfered seriously with the retropubic approach. A deep, obese perineum can sometimes be more of a handicap to the operator than an obese abdomen. Proper position of the patient is important. An extra pad is placed over the kidney bridge, and the patient is placed so that his sacrum is directly over the kidney bridge. This bridge is then raised 6 in. (15.2 cm.), so that the pelvis is greatly hyperextended. In this hyperextended position, the floor of the pelvis and the cut end of the urethra are much more accessible. A slight degree of Trendelenburg is desirable so that the peritoneal contents will fall "upward" out of the way. A stiff rubber 24 F. catheter is inserted into the urethra, and the bladder is drained. The catheter is then sutured to the prepuce with silk sutures, so that it cannot slide out of the urethra while the palpating finger is seeking the plane of cleavage between the urethra and rectum. A midline suprapubic incision is made, which need not extend above the umbilicus in most cases. The Cherney incision is well adapted for this exposure but is not usually necessary. A self-retaining retractor is inserted to hold the rectus muscles widely apart, and an assistant is assigned the duty of keeping the bladder and peritoneum pushed upward, away from the field. Any sizable veins in the retropubic space are then ligated and divided. The puboprostatic ligaments on each side are palpated and cut close to the prostate. In this way, any branches of the dorsal vein of the penis, which might accompany these ligaments, may be grasped and tied. It is our practice to ligate these bleeding points rather than to fulgurate them. Our reason for cutting the puboprostatic ligaments close to the prostate is a part of a plan to leave the tissues in the vicinity of the external sphincter undisturbed. The finger then is passed under the apex of the prostate and under the membranous urethra. The stiff 24 F. catheter that was sutured into the urethra earlier can now be easily felt within the urethra.

Perforation of the rectal wall can occur at this stage of the operation, and to prevent this the surgeon may insert his left index finger into the rectum while he separates the urethra from the rectum (fig. 1). This will enable the surgeon with his dissecting right index finger to easily identify the rectal wall as distinguished from the wall of the urethra, which contains the catheter. As soon as this plane of cleavage is established, another catheter or a rubber tissue drain can be passed under the membranous urethra. The urethra is partly cut across at the apex of the prostate. When the inlying catheter is exposed, in our practice, two marking sutures of heavy (no. 0) chromic absorbable suture are inserted into the distal stump of the urethra at its ventral border. Any finer sutures might soften and break before the end of the operation. It is perfectly practical to place one such suture on either side of the midline to insure a good "bite" in the urethral wall before it is completely divided. As soon as the urethra is divided, the stump retracts distally and is thereafter more difficult to reach for the purpose of introducing new sutures. After these marking sutures are inserted and the urethra is transected, the apex of the prostate gland is lifted up with a vulsellum tenaculum. The rectal wall is then wiped away from the under surface of the prostate and seminal vesicles. With the upward pull on the prostate gland, the seminal vesicles and

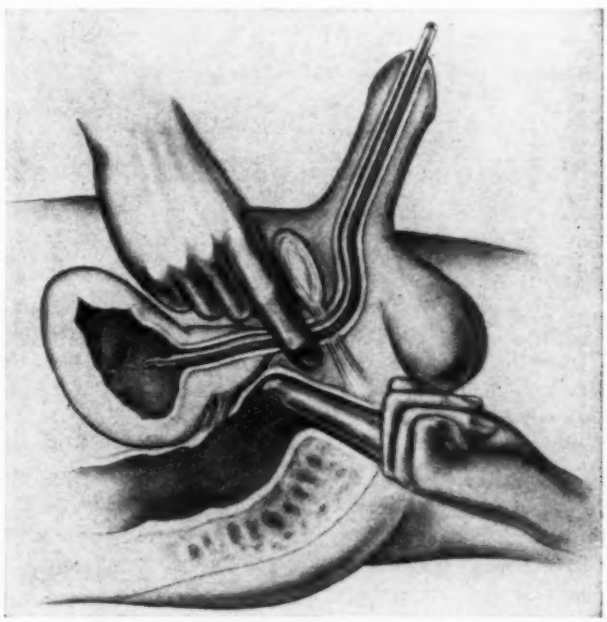

Fig. 1.—Surgeon locating the proper cleavage plane between urethra and rectum, between left index finger (in the rectum) and the stiff catheter in the urethra. Trauma to the fragile rectal wall can thus be avoided.

their surrounding fascia are placed under tension and can be felt running downward laterally, astride the rectum, at the upper limits of the prostate. With a sponge stick, the vesicles with their fascia can be separated from the surrounding tissues so that they stand out like cords under tension.

Brisk bleeding from the stump of the dorsal vein of the penis sometimes occurs when the puboprostatic ligaments and urethra are cut across at the apex of the prostate. This bleeding can be controlled easily with a new catheter that is passed into the penile urethra until the tip appears in the space of Retzius. This end is then grasped and pulled up behind the pubis to meet the other end of the same catheter at the tip of the penis. The two ends are clamped together and given to an assistant who then pulls directly upward (toward the ceiling) on the two ends of the catheter, thus pressing the bleeding ends

13. Jewett, H.: Radical Perineal Prostatectomy for Cancer: An Analysis of 190 Cases, J. Urol. **61**:277 (Feb.) 1949.

of the dorsal vein of the penis against the underside of the pubis (fig. 2). If this traction is maintained for 10 or 15 minutes, the bleeding will stop.

The bladder is then opened at its junction with the prostate gland, superiorly. This incision is carried halfway around the bladder neck on both sides. Caution must be taken not to extend the incision down toward the trigone too quickly, since the ureters are then lifted upward into an exposed position by traction on the prostate gland. A new catheter can be passed through the lumen of the prostatic urethra at this point and used as a tractor to hold the prostate up. Inspection of the interior of the bladder then reveals the ureteral orifices, which can be marked with ureteral catheters during the transection of the trigone and subsequent dissection under the bladder. The trigone is cut across about one-third of the way between the internal urethral orifice and the ureteral orifices. This incision across the trigone is deepened with

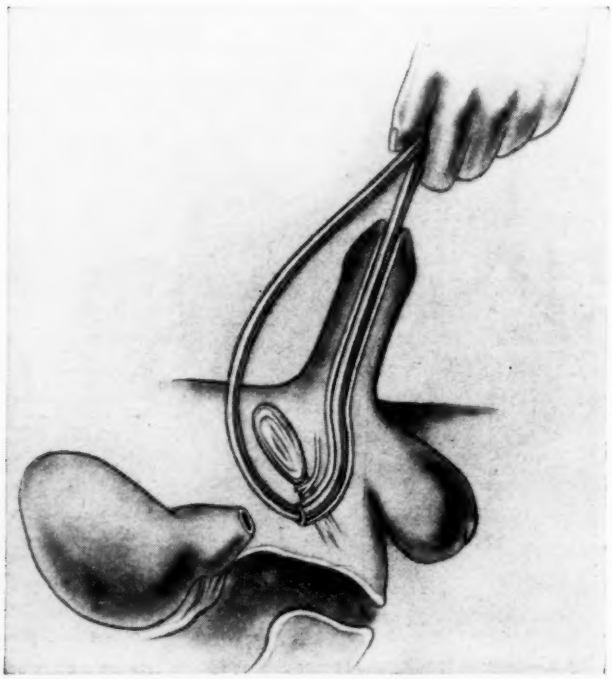

Fig. 2.—Traction upward on the urethral catheter compressing the cut end of the dorsal vein of the penis against the underside of the pubis, thus checking any bleeding from this area.

impunity down to the seminal vesicles and vasa, which lie between the trigone and the rectum. Care should be taken to avoid undermining the trigone, since the ureters are quite superficial at this point. It is our practice to pass a clamp upward in the midline between the two vasa at this juncture, so that each vas may be grasped and dissected out for a distance of about 2 in. (5.1 cm.) downward along the seminal vesicles. The vasa are then cut, and the ends are ligated with chromic absorbable suture. The more pliable of the two seminal vesicles is next wiped clear of its attachments to the bladder, rectum, and ureter, along with its surrounding facia. Every effort is made not to perforate this facia or to expose the vesicle, since it is desirable to remove this fascia intact. This fascia is traced down alongside the rectum to the pelvic wall, where it is grasped with a right-angle clamp, well beyond the tip of the seminal vesicle. It is then divided, and the stump is ligated with a heavy chromic absorbable suture ligature to insure against breakage in the depths of the wound. If the tie should break because of too-fragile suture material, it would be difficult to recover the stump of the vessels that led upward toward the seminal vesicle. From this point on the specimen is attached only by the remaining seminal vesicle and its fascia, which are easily dissected out, clamped, and tied well beyond the tip of the vesicle.

ANASTOMOSIS

Anastomosis of the stump of bladder and urethra can be carried out with three or four sutures of no. 00 chromic absorbable suture at the apex of the trigone. This maneuver is time consuming, and it is necessary that each suture, as it is placed, be separated from the others and identified by a marking clamp of distinctive type. The sutures must be tied down with great caution, so that they will not pull out of the stump of the membranous urethra. The remaining aperture at the bladder neck can then be closed from side to side.

It is our practice to insert a Foley catheter, size 22 F. with a 30 cc. bag, through the urethra at the time of this anastomosis and to bring a second Foley catheter, size 24 F., with a 30 cc. bag, out through a stab wound in the dome of the bladder. The suprapubic tube provides a safety valve and a means of introducing a new catheter, should the penile catheter become dislodged for any reason. We have found it advantageous to deflate the bag of the urethral Foley catheter within the first six hours and tape it in place. If this Foley bag is left inflated, it tends to encourage draining of urine through the operative area for a longer time than if it is deflated early. It has been our practice to leave the urethral catheter in place for 14 days.

A more rapid method of anastomosis is practiced by Flocks [8] and Chute,[10] who placed three mattress sutures through the bladder neck at the point of anastomosis, after the manner of Vest.[14] These sutures are passed out through the skin of the perineum and tied over a bit of rubber tubing or gauze. They act to hold the bladder neck directly down into the proper position and are quickly and easily placed. Some caution should be exercised in passing these needles down through the perineum, lest they run out into the skin of the thigh and become difficult to locate. It has been suggested by Goodwin that three mattress sutures be placed in the bladder neck, passed down the urethra, and affixed to the leg by a rubber-band traction device. Memmelaar sutures the bladder neck loosely around a Foley catheter and inflates the bag to 30 cc. He then pulls this bag down into the bladder neck, which holds it against the stump of the urethra. All of these various methods appear to be satisfactory. It is our practice to pass a no. 24 dilator through the urethra two weeks after the catheter has been removed and again thereafter, as necessary, if any snug point is encountered.

INCONTINENCE AFTER OPERATION

Half of our first 30 retropubic radical prostatectomies were done by resident urologists who had never done the operation before. Despite this inexperience, there were

14. Vest, S. A.: Radical Perineal Prostatectomy: Modification of Closure, Surg., Gynec. & Obst. 70:935 (May) 1940.

no patients with total incontinence after this procedure. One 65-year-old man has had moderate persistent stress incontinence. This record compares favorably with the incidence of incontinence after the perineal operation for radical prostatectomy. It is our hope that development of a satisfactory technique with this more familiar suprapubic route will stimulate wider application of the principle of radical prostatectomy for operable cancers of the prostate gland.

SUMMARY AND CONCLUSIONS

Radical prostatectomy for early cancer is the only available means of curing patients with carcinoma of the prostate gland. Orchiectomy, estrogens, adrenalectomy, and cortisone treatment are merely palliatives. Radioactive isotopes are under early experimental investigation. To be operable, a cancer of the prostate must be discovered early, before it causes symptoms, increases the serum acid phosphatase level or becomes fixed. Physicians who do periodic physical examinations, including rectal examinations, can save patients with cancers of the prostate by early detection of the disease. Biopsy by needle, punch, or open operation can be used to verify suspicions aroused by rectal palpation. The suprapubic (or retropubic) technique for radical prostatovesiculectomy, which does not disturb the area of the external urinary sphincter and which affords an exposure of the routes of possible metastases, is described in detail.

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PHYSIOLOGICAL AND CLINICAL ASPECTS OF CONCEPTION

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Medical research in the past few decades has made great strides, and as a result many physiological and pathological processes have been clarified to a remarkable degree. Yet, some of the most basic biological phenomena have stubbornly resisted laboratory and clinical investigation, with real progress occurring only in slow and painstaking stages. In this class is the phenomenon of human reproduction. Although there have been numerous and varied recent attempts to elaborate on the mechanism of this complicated process, there is much that is still obscure. This report reviews certain of the known aspects of normal reproduction and attempts to correlate these with a number of conditions found in clinical infertility.

In the male, endocrine stimulation from the anterior pituitary is responsible for normal testicular function, including the production of male sex hormone or hormones and sperm. The pituitary follicle-stimulating fraction (F. S. H.), under hypothalamic influence, is believed to regulate sperm production, while the luteinizing fraction (L. H.) controls the production of androgens. The scrotal location of the testes is important for preserving spermatogenesis, but intra-abdominal temperatures do not significantly affect the endocrine function. Sperm develop, undergo mitotic division, and attain a certain amount of maturation in the seminiferous tubules. They are then stored in the epididymis, where maturation continues, and they become capable of motility. The process of development of mature sperm probably requires about three weeks. In this connection, it should be noted that acute toxic influences on sperm production are not immediately evident in the semen specimen. There is a lag of at least 10 days before depression in spermatogenesis is noted, with the maximum effect observed in about four to six weeks, and then a gradual return to normal. Delayed responses of this type are of clinical importance in correlating the influence of trauma and therapy.

The bulk of seminal fluid, the vehicle for transport of spermatozoa, is provided by the prostate and seminal vesicles, under the influence of androgenic stimulation. The seminal vesicles are the source of fructose, which is metabolized by the spermatozoa for energy for motility. (Motility is still possible aerobically in the absence of fructose.) In view of this close relationship between fructose secretion and androgenic stimulation of the seminal vesicles, a seminal fructose test has been proposed to evaluate male hormone activity.[1] In normal males, the seminal fructose level varies between 200 and 700 mg. per 100 cc., whereas in persons with androgenic deficiency the values are often below 200 mg. per 100 cc. The majority of patients seeking treatment for infertility, however, are not hypogonadal from an endocrine standpoint, and comparison of seminal fructose levels in fertile and subfertile men fails to show any marked difference. Most subfertile husbands erroneously assume that their relative infertility implies lowered "virility." It is clinically important to impress these patients with the fact that the two functions of the testes are separate and that (as is usually the case) their glandular output is normal. Emphasis on this distinction will in some instances help dispel the feeling of inadequacy suffered by these patients.

The transport of spermatozoa from male to female by means of the ejaculatory process is a relatively complex mechanism, involving cerebrocortical and spinal neurological components, and depends on adequate androgenic function. Such coital disturbances as premature ejaculation are generally insignificant as etiological factors in clinical infertility, as long as the semen is deposited intravaginally, unless they interfere appreciably with the frequency of intercourse.

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1. Landau, R. L., and Loughead, R.: Seminal Fructose Concentration as Index of Androgenic Activity in Man, J. Clin. Endocrinol. **11**: 1411, 1951.

Spermatozoa, when deposited in the vagina, are placed in a physiologically hostile environment. The normal vaginal pH is approximately 4.5, a degree of acidity too high to favor sperm viability. The latter do best in a slightly alkaline medium, such as the pH of 7.5 usually found in semen. It is rare to find semen specimens of low pH, even in instances of severe male infertility. This stability of the pH is generally undisturbed even by chronic infections of the accessory sex glands. Infections of the vagina usually produce elevation of the pH and accordingly do not contribute to diminished fertility on the basis of acidity.

The hostile environment encountered by spermatozoa in the normal vagina is offset to a large extent by the buffering capacity of the semen. Effective buffering ordinarily permits survival of adequate numbers of sperm sufficient long to allow penetration of the cervix. In spite of buffering, however, spermatozoa soon lose their viability in the vagina; therefore, prompt spermigration is essential for reproduction.

It has long been believed—although some current investigators dispute this—that the vaginal pH is maintained at an acid level by the action of the normal bacterial flora, chiefly Doederlein bacilli. These organisms act on glycogen, breaking it down to lactic acid and carbon dioxide. The resultant acid environment is favorable to the growth of Doederlein bacilli and unfavorable to many pathogenic organisms. Hence a paradoxical condition exists in the vagina, where the pH is optimal to maintain a normal healthy flora yet too low to favor survival of the cells essential for reproduction. Cervical secretions, on the other hand, generally exhibit a pH of approximately 7.5, and are accordingly more favorable to spermatozoa. It is possible that this difference in the pH is one of the factors that favors migration of the sperm from the vagina into the cervix, although it does not explain further directional progress in the upper genital tract. Bickers believes such progress depends to a considerable extent upon contractions of the uterine musculature, and attributes certain cases of infertility to myometrial dyskinesia at the fertile time of the cycle.[2]

The cyclic variations that occur in cervical secretions are quite marked, and many of the changes have been elaborately detailed by Pommerenke and his associates.[3] Near ovulation, the secretions are thin, abundant, and rich in carbohydrate. During this phase cervical mucus exhibits pronounced fern-like crystallization, a phenomenon that may readily be observed by spreading a thin film of mucus on a slide and allowing it to dry. At this stage of the cycle, cervical secretions are most receptive to spermatozoa. During other phases of the cycle, the physical characteristics of cervical mucus are relatively unfavorable for sperm penetration, a situation that implies the correlation of fortuitous circumstances at the specific time when conception is possible.

Many investigators believe that the factor of abnormal cervical secretions is the commonest single cause of infertility. Specific treatment with antibiotics is indicated in certain types of cervicitis, but procedures such as extensive cauterization can cause irreparable harm by destroying the cervical glands. (This type of conservatism should also apply to certain other vague and more extensive surgical procedures used in the treatment of infertility, since there are still too many "unknowns" in the cause of barren marriages to warrant resort to radical therapy by a process of elimination.) Estrogenic therapy has been employed to alter the secretions favorably for spermigration, but, since large doses may inhibit ovulation, the amount given should be carefully regulated. A daily oral dose of 0.1 mg. of diethylstilbestrol or the equivalent in other estrogens is frequently used to increase cervical secretion.

It is interesting to note that when sperm motility is observed in seminal fluid, there is very little evidence of any straight directional course. Vigorous, scattered motility occurs in many directions, and it is my opinion that attempts to define types of directional motility in the semen as normal or abnormal are futile, as long as such motion is highly active. The quality of motility in normal cervical secretions, however, is quite different, for in this medium spermatozoa generally show a definite, forward, directional progress. Whether this is due entirely to the physical characteristics of cervical secretions, or whether it is due to a chemotaxic effect, is highly conjectural. Since sperm microscopically observed in cervical mucus are removed from the genital tract, one might assume that any effects are directly attributable only to the surrounding medium.

Survival of spermatozoa in the female genital tract has been the subject of considerable speculation. After intercourse, during the ovulatory phase of the cycle, viable spermatozoa can generally be found in the cervical canal for 48 hours and occasionally considerably longer. Viability of sperm in the upper portions of the genital tract has been estimated to be as long as five days, but this does not necessarily imply a fertilizing capacity for that length of time. In lower animals it has been shown that the fertilizing capacity of spermatozoa can be destroyed without concomitant loss of motility.[2a] The life of the ovum, from the standpoint of fertilizability, has been estimated to be no longer than 24 hours, based on observations in other species.

Experimental evidence indicates that the time required for progress of sperm from the cervix to the fimbriated ends of the fallopian tube is probably only a few hours. Brown, for example, during laparotomies, found that sperm were obtainable in the tubes three hours after they were placed in the vaginal canal.[4] This prompt sperm migration would tend to indicate that intercourse timed very close to ovulation would be most advantageous from the standpoint of insuring conception. Delay in spermigration or ovum transport may be due to abnormal tubal peristalsis, a condition that can be demonstrated by kymographic carbon dioxide insufflation or fluoroscopic study.

The union of sperm and egg is believed to take place in the outer portion of the fallopian tube, near the junction of the distal and middle third. Seymour and Ben-

2. Bickers, W.: Patterns of Uterine Motility in Relation to Spermigration, Fertil. & Steril. **2**: 342, 1951.

3. Pommerenke, W. T., and Viergiver, E.: Relationship Between Cervical Mucus and Basal Temperature Cycles, Am. J. Obst. & Gynec. **54**: 676, 1947.

3a. Tyler, A.: Fertilization and Immunity, Physiol. Rev. **28**: 180, 1948.

4. Brown, R. L.: Rate of Transport of Spermia in Human Uterus and Tubes, Am. J. Obst. & Gynec. **47**: 407, 1944.

mosche, in electron microscope studies of spermatozoa, have suggested that the heads of these cells have a small cup-like area, which is possible significant as a point of contact for sperm and egg.[5] We have also noted this same consistent concavity in the sperm head.[6]

The presence of the egg at the site of ovulation is the culmination of a sequence of events that includes preliminary maturation of a graafian follicle in the ovary under the influence of anterior pituitary gonadotropic stimulation. The three hormones that are now believed to comprise gonadotropic secretion (follicle-stimulating, luteinizing, and luteotropic) act in coordination to effect maturation of the follicle and its rupture and corpus luteum formation and function. Failure of ovulation is one of the common causes of infertility, but its incidence is undoubtedly not as high as was formerly believed. Attempts to induce ovulation with gonadotropins are generally clinically disappointing, but occasionally the use of estrogens during the major portion of one cycle may result in ovulation in the succeeding cycle.

Migration of the egg into the fimbriated end of the fallopian tube, following its extrusion into the peritoneal cavity, is a process that may have chemical aspects in addition to such obvious physical factors as peritoneal currents. Whether or not there is active participation on the part of the fallopian tube in the process is another matter for speculation. In rabbits, a portion of the tube apparently surrounds the ovary at ovulation to facilitate transport.[7] In humans, Decker has reported culdoscopic observations indicating motility and change of size of the ovarian ligaments near ovulation, factors that he considers favorable to ovum receptivity by the tube.[8]

The corpus luteum, formed at the site of ovulation, functions for a little over a week in the nonpregnant cycle and then deteriorates. Should pregnancy intervene, this endocrine gland undergoes further development and is an important source of hormones during pregnancy. It is not indispensable to pregnancy, for gestation has continued even when this gland has been removed. Much of its function can be carried on by the placenta after this structure has become adequately developed.

Following fertilization, the egg is carried by peristaltic action into the body of the uterus, where nidation takes place, approximately six days after fertilization. At this time, the fertilized egg elaborates enzymes that help erode the surface of the endometrium for implantation. The products of erosion probably also provide nutrient for the developing egg. Decidual changes in the endometrium and subsequent placental formation result indirectly from continued endocrine stimulation in amounts far above those found in the nonpregnant state.

SPERMATOZOA REQUIREMENTS FOR CONCEPTION

There has been much speculation concerning certain mechanisms involved in conception. For example, in view of the need for only one sperm for fertilization, one cannot but wonder at the millions of spermatozoa present in the average ejaculate. Several years ago, it was suggested that one reason for this abundance was the necessity for obtaining adequate hyaluronidase at the site of fertilization. This enzyme, carried by the sperm head, was thought to be essential for fertilization in denuding the egg of its follicular cells. More recently it has been shown experimentally that removal of these cells is not essential for fertilization and that spermatozoa can reach the ovum through intact follicular cells. Clinically, despite initial enthusiasm, hyaluronidase has not been found effective as a therapeutic agent in sterility.[9]

Chang,[7] in studies of rabbit fertilization, has given some indication of another possible reason for the large numbers of spermatozoa in the ejaculate. On the basis of microscopic examination of serial sections of tubes, after insemination, he estimates that only 1 out of 100,000 sperm reaches the site of fertilization. This would tend to indicate that there is less of a superabundance of sperm than we have believed.

There have been a number of conflicting reports in the literature concerning the lower levels of seminal values at which pregnancy can occur. One often reads reports by investigators of conceptions occurring when the husband's sperm count is as low as 500,000 per cubic centimeter or even less. It is my opinion that conceptions at such figures, if they occur at all, are extremely rare. In table 1, 164 pregnancies, which occurred during the course of therapy of 570 subfertile couples, are analyzed from the standpoint of semen levels at which conception occurred. The maximal sperm count noted during investigation is the factor that determined in which category the husband should be placed. The 73 husbands who had consistent counts no better than 20 million per cubic centimeter were responsible for only two conceptions (2.7%). The group in which the sperm count varied between 20 and 40 million achieved a conception percentage of 15.5%, a significantly lower figure than the 26.9% level in the 40 to 60 million group. When the count was 60 to 100 million, the pregnancy rate was decidedly better (36.0%), but not much different from the group with counts of 100 million or higher (38.8%). This would tend to give some support to the figure of 60 million per cubic centimeter as the lower limit of normal sperm concentration.

TABLE 1.—*Percentage of Conceptions Known to Have Occurred at Various Sperm Count Levels**

Level of Sperm Count, Millions per Cubic Centimeter	No. of Patients Treated	No. of Pregnancies	Percentage of Conceptions
100+	201	78	38.8
60-100	136	49	36.0
40- 60	89	24	26.9
20- 40	71	11	15.5
1- 20	73	2	2.7

* The sperm counts shown were the best observed while the couple was under investigation.

It may be argued that the low incidence of conceptions at the lower sperm count levels in this series might be attributed to subfertility in the wife. However, this is negated by the fact that a number of the wives in this

5. Seymour, F. I., and Benmosche, M.: Magnification of Spermatozoa by Means of Electron Microscope: Preliminary Report, J. A. M. A. **116**: 2489 (May 31) 1941.

6. Tyler, A., and Tyler, E. T.: Electron Microscope Studies of Spermatozoa, A. M. A. Scientific Exhibit, 1946.

7. Chang, M. C.: Fertility and Sterility as Revealed in Study of Fertilization and Development of Rabbit Eggs, Fertil. & Steril. **2**: 206, 1951.

8. Decker, A.: Culdoscopic Observations on Tubo-Ovarian Mechanism of Ovum Reception, Fertil. & Steril. **2**: 253, 1951.

9. Tyler, E. T.: Fallacies in Infertility, Urol. & Cutan. Rev. **55**: 344, 1951.

group promptly became pregnant when donor insemination was employed. A series of semen analyses was obtained on one patient who received various types of therapy for almost two years and whose counts ranged between 2 and 28 million. When donor insemination was resorted to, pregnancy occurred after a single insemination. If diminished fertility of the wife had been a factor, it is highly improbable conception would have occurred so readily. It is possible that reports of conceptions occurring in the presence of extremely low sperm counts do not take into consideration the marked fluctuations that can frequently occur in semen values in the same person. The specimen examined may not necessarily bear a close relationship to the semen level at the specific time of conception.

Efforts to increase spermatogenesis in the infertile male are generally not very successful.[10] In the last few years many methods of treatment have been hopefully advanced, but the extremely oligospermic husband remains a therapeutic problem. Certain types of empiric medication, such as the routine use of thyroid, are probably valueless.[11] The most significant recently advanced therapy has been the use of testosterone "rebound." This treatment involves preliminary suppression of spermatogenesis by testosterone, to the point of complete azoospermia. After an interval of one-half year to a year and a half, rebound to normal sperm production should occur in properly selected cases.[12] However, of 21 men I have treated thus far, not a single one has shown the anticipated rebound in repeated observations for as long as two years.

TIMING OF CONCEPTION

In view of the clinical importance of determining the time of ovulation, as well as its occurrence, the use of basal body temperature charts has become relatively widespread in infertility practice. Many patients have been taught to utilize these charts as absolute guides for timing intercourse and intervening periods of continence. It has been commonly accepted that ovulation occurs near the thermal shift in the chart and that other phases of the cycle are relatively or completely infertile. On a theoretical basis, the use of these charts would seem quite valuable. From the practical standpoint, however, there is considerable limitation to their usefulness. One obvious drawback is the fact that many charts kept by infertility patients show a grossly irregular pattern that defies interpretation. In these it is often impossible to pick the definite time of thermal shift, even when a shift occurs. A dip in temperature supposedly occurs prior to the rise, which is presumably characteristic of ovulation, but only an occasional chart shows this. Many investigators feel that the temperature shift bears no consistent relationship to ovulation, in that the latter phenomenon can occur several days before the temperature changes or even after it.

My own impressions concerning the time of ovulation are derived by inference from the charts of patients in whom donor insemination was employed only once in the cycle in which conception occurred. The husbands in this series were completely infertile because of azoospermia, and therefore it would be reasonable to assume that pregnancy occurred as a result of the single insemination. (The scope of this report does not permit a discussion of the various moral and legal aspects of donor insemination, but these statistics are presented for what data they may add to the problem of determining the time of conception.) In a series of 29 conceptions one occurred when insemination was performed as long as five days before the temperature rise, three resulted from insemination four days before, and one occurred four days after the shift. Most conceptions occurred in the interval between two days before and two days after the rise, but this does not necessarily imply as great a difference as it would seem, in view of the proportionately larger number of inseminations done on these days. One patient—apparently highly fertile—became pregnant three times, with the use of a single insemination on each occasion. The first two inseminations were done three days before the temperature shift, while the third was performed four days before the temperature rise.

It may, of course, be questioned whether ovulation or fertilization necessarily occurred near the time of insemination in these cases. If a limited period of fertilizing capacity of sperm or fertilizability of egg is assumed, the time relationship probably exists. It is possible, however, that both these cells may exhibit marked variability as far as fertilization is concerned. It is also possible that intercourse can stimulate ovulation, a situation that occurs in some lower animals. In the instances where artificial insemination was used, coital stimulation would not be a consideration, unless intercourse with the husband occurred at approximately the same time. Another factor is the possibility that certain constituents of the semen may exert a physiological action in the female. Current laboratory studies on the protein constituents of semen have indicated certain effects on the female genital tract, but whether these are clinically significant is difficult to ascertain at present.[13]

THERAPEUTIC EFFECTS OF ARTIFICIAL INSEMINATION

There has been a great deal of controversy concerning the value of artificial insemination with the husband's semen. This procedure is often employed when oligospermia is present, as well as in cases where there is no seminal inadequacy. Since the two groups present different situations, they should be considered separately.

A total of 1,086 instances of artificial inseminations were reviewed. In the group with normal semen, conceptions occurred in 42 cycles in which artificial insemination happened to be employed and in 38 cycles during which no inseminations were done. While individual factors varied, the wives were a basically similar "functional" group and hence the statistical comparison, though limited, is probably significant.

In many of these instances insemination was employed as a possible method of circumventing cervical hostility, but apparently instilling the semen low in the cervical

10. Tyler, E. T., and Payne, S.: Spermatogenesis and Therapy of Infertility, J. A. M. A. **134**: 770 (June 28) 1947. Howard, R. P.; Sniffen, R. C.; Simmons, F. A., and Albright, F.: Testicular Deficiency: Clinical and Pathologic Study, J. Clin. Endocrinol. **10**: 121, 1950.

11. Tyler, E. T.: The Thyroid Myth in Infertility, Fertil. & Steril. **4**: 218, 1953.

12. Heller, C. G., and others: Improvement in Spermatogenesis Following Depression of Human Testis with Testosterone, Fertil. & Steril. **1**: 415, 1950.

13. Singher, H.: Personal communication to the author.

canal does not correct this factor. Certainly the results fail to show any therapeutic effectiveness attributable to artificial insemination when the semen is normal.

In the group of oligospermic men, the data suggest that pregnancy is more readily possible with the use of artificial insemination (table 2). Of 33 conceptions that were reviewed in this group, 21 occurred in cycles during which insemination was employed and 12 in cycles during which insemination was not done. The apparent increased effectiveness in the oligospermic group may lie in the fact that insemination using the cervical cap or speculum technique prevents a certain amount of inactivation of spermatozoa by the vaginal secretions, and this may be significant when reduced numbers are present.

In this group insemination was often done alternately with the cervical cap and without it in the same cycle, and no data are available concerning the relative merits of these procedures. When the cap is utilized, care must be exercised that the semen does not leak out during insertion; otherwise the device may inadvertently serve as a barrier to contact of semen with the cervix. Properly used, the cervical cap helps to provide more prolonged contact of semen with the external cervical os.

"CONCEPTION-LESS FERTILIZATION"

As outlined previously, implantation of the fertilized egg in the endometrium depends on adequate transport of the fertilized egg through the tube and into the endometrium, together with the initiation of trophoblast enzymatic activity at a time when the endometrium has been adequately prepared. In some obscure instances of infertility, where no obvious pathological conditions are found, it is possible that fertilization may occur but the fertilized egg is unable to implant itself in the endometrium and menstruation occurs on schedule. The term "conception-less fertilization" may be loosely assigned to this problem, because conception—a term that implies lodging of the fertilized egg in the uterus—has not taken place. These patients may be found to have poor progestational endometriums on repeated biopsy, and abnormal basal temperature charts in the luteal phase, showing short or gradual elevations. Since the inadequately developed endometrium may be a result of poor corpus luteum function, large doses of progesterone should be given, together with estrogens (1.5 mg. of Estrotate [estradiol-3-trimethylacetate] and 15 mg. of progesterone intramuscularly daily would be an average dose). Substitution therapy of this type may inhibit a certain amount of gonadotropic stimulation, and accordingly chorionic gonadotropin is also employed. If oral medication is used, the doses must be very large; 75 mg. of ethisterone (Pranone) together with 4 mg. of estradiol trimethylacetate should be considered a minimal daily dose. Chorionic gonadotropin (1,000 I. U. on alternate days) can be given only by injection. Occasionally this type of therapy will delay the onset of menses, but this delay can generally be differentiated from pregnancy by an atypical fluctuating basal temperature curve that fails to show the persistent elevation noted during pregnancy.

Poorly developed endometriums at the time of nidation in certain instances of habitual abortion may also be a factor. Adequate preconceptional investigation, including endometrial biopsies and determination of pregnandiol values, may direct attention toward this type of deficiency. Although results of any type of therapy in habitual abortion invite skepticism on a purely statistical basis, treatment of these patients, initiated prior to conception, and particularly in the second half of the cycle in which pregnancy is attempted, merits consideration. Hughes, in his preconceptional treatment clinic, has investigated the endometrial phase of the infertility problem in great detail and his therapeutic accomplishments are very encouraging.[14]

STERILITY OF UNKNOWN CAUSE

Even in a specialized infertility practice, a large majority of the patients studied fail to become pregnant despite all therapeutic attempts. This group not only emphasizes present diagnostic limitations but also points out the need for systematic investigation of the infertility problem by men willing to devote adequate time to it. Perhaps some of the newer methods of observation may prove helpful by providing information concerning such factors as migration of the egg from ovary to tube, or minor structural changes in the genital tract that can interfere with conception. Certain types of infertility, notably "one-child sterility," long thought to be attributable to cervical trauma or tubal pathology, may prove to have an immunological basis. This possibility is not too remote when one considers that rabbits, for example, have been experimentally immunized to the antigenic components of human or rabbit sperm. The actual process of fertilization may prove to be basically an immunologic phenomenon, as advanced by A. Tyler.[3a] The elaboration of these mechanisms in experimental animals will undoubtedly shed more light on some of the problems encountered clinically.

TABLE 2.—*Relative Incidences of Conception When Artificial Insemination Was Utilized and Not Utilized in Women with Normally Fertile Husbands and Women with Oligospermic Husbands*

	Normal Semen	Oligospermic Semen
No. of conceptions when insemination was employed	42 (52.5%)	21 (63.6%)
No. of conceptions when insemination was not employed	38 (47.5%)	12 (36.4%)

There is much that is still obscure in the mechanism of conception and in many basic problems of sterility. In a specialized sterility practice today, it is unlikely that more than one out of every three couples with a true sterility problem can be helped. This is probably an accurate figure, if those patients are excluded who prematurely seek medical advice and receive therapy long before there is any need for it. Uniform criteria for effectiveness and pooling of results would be highly desirable in this field of medical practice in order to obtain a true and adequate appraisal of clinical results.

SUMMARY

The physiology of conception is reviewed, with reference to certain specific aspects of the problem of sterility. Studies on approximately 4,000 semen specimens indi-

14. Hughes, F.: A. M. A. Scientific Exhibit, 1952.

cate that pregnancy is highly unlikely when the sperm count remains consistently below 20 million. Despite encouraging recent reports of treatment of male infertility, there is no real solution for this problem at present.

The day of basal temperature shift may not necessarily coincide with ovulation, and therefore should not be used too arbitrarily as a guide to timing coitus in treatment of infertility. Single donor inseminations have resulted in pregnancies as long as five days before the temperature rise in women with azoospermic husbands.

A cause of sterility that may be overlooked in certain apparently normal women can be somewhat loosely termed "conceptionless fertilization." This involves failure of implantation after the egg has been fertilized. In such cases treatment should be intensive during the second half of the cycle, with therapy directed toward improving endometrial quality. In certain types of habitual abortion, similar therapy should be given prior to conception.

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ACADEMIC FREEDOM IN MILITARY MEDICAL RESEARCH

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From the times of origin of universities down to the present, academic freedom has been a topic of concern to instructional staffs, administrators, and the public. To discuss its various meanings would lead to a consideration of semantics far beyond the compass of this paper. For our purposes it is enough to say that academic freedom implies in the minds of most moderns the right and duty of teachers to present the truth as it is currently conceived. Among military personnel freedom of teaching can be exercised in the many courses of instruction given in the services and especially in the influence of the more senior investigators on their younger colleagues and pupils. We consume research talent, and effort should be made to replenish and enlarge the supply of investigators. To do so requires freedom for both seniors and juniors.

SECURITY AND PUBLICATION

Freedom, however, has a broader connotation than the adjective "academic" permits. Freedom in science should grant the power to choose, to think, to try and fail, and the privilege of intellectual liberty. All investigators owe to science the obligation to disseminate results. Here the military investigator is sometimes at a disadvantage as compared with his civilian colleagues because he is faced by the bugbear of classification. He is not free to publish material that higher authority declares secret, confidential, or restricted. Nor is he always clear as to why the classification is imposed. This handicap is recognized, however, by many who have thought the matter through. In one of the Steelman reports there is a discourse on security versus scientific freedom. "A security policy should be developed in relation to science which will permit the maximum opportunity for creative endeavor and freedom in dissemination of results consistent with national security. This requires continuing review as the situation changes." Henry D. Smyth of the Atomic Energy Commission states that a large part of the work of AEC's division of research is unclassified and says that "the decision to handle this work without secrecy comes from the conviction that secrecy retards progress." Admitting that classification may be necessary for some work at some time, we believe that continuing review and revision are of paramount importance.

The very nature of military research cannot permit the same freedom of choice in investigative projects that is allowed the civilian except as may apply perhaps in some of the commercial and industrial establishments. Even in the latter, however, freedom is becoming greater as industrialists recognize the fact that, as stated by Brig. Gen. David Sarnoff, "progress is our most important product," and progress is made only by research and development. By and large, the civilian takes up projects of interest to him, some problem initiated by his innate intellectual curiosity. This is not denied the military investigator, but in many instances cannot be granted to him.

VALUE TO HEALTH

Medical departments of the services are charged with promotion of the health, safety, and efficiency of the personnel. The research effort has the same objectives and similarly is often applicable to both military and civilian medicine. President Truman in his address to the 1952 meeting of the Association of Military Surgeons said, "the advances we have made in improving the health of the American people are, in great measure, the result of steady progress in medical research." Admiral Pugh, at the same meetings, evidently reflecting the views of all three Surgeons General, said, "medicine . . . will remain alive and progressive commensurate with the degree in which it engages in research." Whether research is conducted in military laboratories and hospitals or by contract in civilian institutions, freedom in research is essential. Administration is necessary but should be tempered to the requirements and freedom of the research workers. "Housekeeping," provision of supplies, personnel management, and the like properly belong in this field. It would be well if the military administrator could have a background of research, but he, in any event, must have sympathy with it. He must cooperate with the research staff to the extent of granting all freedom possible.

Medical Research Adviser to the Surgeon General, U. S. Navy (Dr. Karsner).

Read before the Section on Military Medicine at the 102nd Annual Meeting of the American Medical Association, New York, June 4, 1953.

The opinions or assertions contained herein are the private ones of the authors and are not to be construed as official or reflecting the views of the Navy Department or the naval service at large.

RECRUITMENT

The support of military medical research is by public funds, and its justification lies in convincing those who administer appropriations that it is to the ultimate advantage of the combatant forces and the nation. The research problem may be set up because of requirements or needs of some agency of the armed services or the investigator may propose a project based on his own knowledge of these needs and requirements. Big or little as the problem may be, the answer can best be given by the highest grade research workers who can be obtained and retained. To obtain and to retain such persons are two closely integrated facets of the same situation and apply to the military services even more stringently than to other organizations. Various factors play a part; income, security of tenure, retirement, financial resources for material, equipment, congenial atmosphere, and other factors enter the picture, but to the highly qualified investigator the greatest of all is freedom.

Anyone entering on a career in military medical research must have the good sense to realize that the primary mission is military. He should familiarize himself with military operations in order to understand why his projects are of importance, and he should be free to go into the field in order to gain intimate acquaintance with operational activities.

How then can freedom be offered as an inducement to enter and stay in military research? Our answer is simple enough. The best man for the mission is the best man obtainable. And the best man cannot be confined to answering questions by using only methods and procedures already in effect. The best man appreciates the need for practical answers, but he cannot make his best contributions if that is all he is allowed to do. He cannot be the best man if he does not see beyond the immediate problem to others that underlie it and that may provide the basis for an answer. This leads him into unexplored fields; he delves into basic research. It might well be said that basic research is the function of the universities and research institutes, but here we deal with the practical matter of obtaining and retaining the best investigators, and the best have a certain devotion to enlarging the field of human knowledge. The Steelman report divides basic research into (*a*) fundamental research and (*b*) background research. Background research uses known principles to reach clearly defined objectives. More simply stated, it directly supports applied research. Not infrequently an investigator finds that there are gaps in information necessary to solution of his problem and he must fill the gaps himself. Fundamental research extends knowledge of general principles governing natural phenomena and that alone. If that knowledge proves to be applicable, it is a by-product rather than an aim. Fundamental research cannot be "directed," cannot be judged by results, cannot go by a timetable, and cannot be productive without great freedom.

ADMINISTRATIVE APPROACH

There are different ways in which military medical research is practiced, and in each the matter of freedom is involved. One method is by direction from a central office. Scientists and administrators in such an establishment have a broad over-all view of military requirements and are familiar with the supporting budgets. A potential disadvantage is that the investigator may be restricted in his free choice of problems and in his opportunity to conduct background and fundamental research.

In contrast is the freedom implied by initiation of projects in the periphery, that is, in the hands of the investigators in laboratories and other installations of the medical departments. The advantage lies in the fact that, generally speaking, the best research is that which originates in the mind of the scientist. This may well be the most scientific mode of approach, but when all aspects of military research are considered it cannot always be practiced. The military establishments must have a program of research, which naturally applies to the individual establishments, and the investigators are somewhat limited in freedom because of the necessity for fitting the projects into the program.

Another point is the relative merit on the one hand of task forces or expeditions and on the other hand of the permanent installation in the field. The task force may be handicapped as to freedom by limitations of scope and time, but materials and ideas brought back often provide for relative freedom and certain valuable results. The fixed installation permits more freedom than the task force. It fits into the over-all objective yet can take advantage of conditions in and peculiarities of the local environment and can seize opportunities that may not be readily apparent to a central group.

The services also avail themselves of contracts with civilian institutions. The disadvantages lie in less direct control by the military and less contact with operational requirements and the difficulties of dealing with classified topics. There are, however, definite advantages in that basic research can be encouraged, that highly specialized information can be provided, and that expensive equipment may be more readily available than is true in the services. Contractual research can be complementary to military research, and there can be a free interchange of ideas and results.

CAREER PATTERNS

Even though it may be necessary for the operational requirements of the services, the transfer of military personnel from one station to another often limits freedom in research and prevents actual continuation of certain studies. This situation could be corrected in large part by the establishment on a reasonably firm basis of career patterns in research for the armed forces.

Conscientious aid, advice, guidance, and coordination are provided by such agencies as the Research and Development Board of the Department of Defense, the National Research Council, and comparable bodies in the three services. Thus, there is assurance that military medical research will be purposeful and productive, that extravagance will not be tolerated, and that needless duplication will be avoided. Only by research can we keep abreast of friendly nations and progress further than our potential enemies. And only by freedom commensurate with national policy can this research be most productive.

Bureau of Medicine and Surgery, Department of the Navy (Dr. Karsner).

PRESENT STATUS OF OPHTHALMIC JOURNALISM IN AMERICA

CHAIRMAN'S ADDRESS

Francis Heed Adler, M.D., Philadelphia

Ophthalmic journalism in this country has now attained world leadership. It is time to evaluate how well it is meeting its present obligations and to consider in what ways it should develop. As one looks at the past of ophthalmic journalism, it seems that it has had no very proper upbringing, but like Topsy, "just grew."

The first American journal devoted to ophthalmology appeared in 1862, edited by Julius Homberger. This journal was called the *American Journal of Ophthalmology,* but was not even distantly related to our present American journal, and, according to good authority,[1] it was "short-lived" and "ill-famed." It lasted only two years. The oldest publication in existence today is the *Transactions of the American Ophthalmological Society,* which first appeared in 1864. Fifty volumes have been published to date, containing some of the best work done in this country. The *Archives of Ophthalmology* followed in 1869, with the title *Archives of Ophthalmology and Otology,* under the editorship of Herman Knapp, who not only was a distinguished ophthalmologist, the founder of the New York Ophthalmic and Oral Institute, and the first chairman of the Section on Ophthalmology but also had the especial honor bestowed on him by Providence of being the father of Dr. Arnold Knapp.

Another *American Journal of Ophthalmology* appeared in 1884. In 1917 it absorbed three of the then existing journals—the *Ophthalmic Record,* the *Annals of Ophthalmology,* and *Ophthalmology*—and became an entirely new journal under the editorship of Edward Jackson. Under the aegis of outstanding editors, this has grown to be our present great *American Journal of Ophthalmology,* with Dr. Derrick Vail as its able and dynamic editor. As stated, the *Archives of Ophthalmology* was first published as the *Archives of Ophthalmology and Otology,* but in 1879 the two sections split and the *Archives of Ophthalmology* continued alone. This journal was the direct descendant of the German journal *Archiv fur Ophthalmologie.* Following his father, Dr. Arnold Knapp continued to publish the *Archives of Ophthalmology* privately until 1929, when the ownership was transferred to the American Medical Association, and this journal became one of the A. M. A.'s special journals.

Table 1 shows all the journals that have been started since 1862 in chronological order. Those still being published today are marked with an asterisk. Of the 27 periodicals, only 13 are still in existence. Table 2 shows the number of journals started in each decade, from 1860 to date, and the number still in existence. There is no evidence that journals were begun in response either to the growth of scientific organizations or to the number of men practicing ophthalmology. The greatest increase in number of journals came around 1900, and since then the number of new journals has gradually fallen off. It seems evident that the point has been reached where supply and demand are about balanced.

It is difficult to determine whether there has been an increase in reading interest in periodicals. The chart shows the increase in the number of paid subscribers of the *Archives of Ophthalmology* since it was taken over by the American Medical Association. Dr. Vail tells me that these figures are similar to those of the *American Journal of Ophthalmology.* These cannot be construed as proving an increase in reader interest, since this could only be judged by comparing the circulation figures with those showing the increase in the number of ophthalmologists in this country during the same period. When comparing the circulation figures with the number of candidates who applied to take the American Board of Ophthalmology examination in the same period of time, one finds the increase in subscribers about matches the increase in number of men applying to take the board examinations. This presumably means that the increase in subscribers is due partly to the increase in the number of potential readers and not entirely to reader interest.

FUNCTIONS OF AN OPHTHALMIC JOURNAL

What are the functions of an ophthalmic journal, and how well do the 13 periodicals now in existence carry out these obligations? There are a number of tasks that scientific periodicals should fulfill. Obviously, it would be a waste of paper if each journal undertook all of these. Some specialization must necessarily develop, if not by design, simply by natural selection, for no one journal could possibly do all the jobs equally well. I conceive the following as the most important of these tasks: 1. First is the publication of original scientific manuscripts that present the results of laboratory and clinical research and descriptions of new instruments and other means of therapy. 2. Next is the recording of rare or new disease entities. 3. Another task is reviews of specific subjects, bringing knowledge of the subject up to date and developing concepts for further research. 4. Abstracts of current literature are important, especially the foreign literature, which might not be easily available to the average ophthalmologist, and literature from journals other than ophthalmologic containing articles of interest to ophthalmologists, for example, the basic science journals and special journals in other fields related to ophthalmology. 5. Annual reviews, covering the whole of ophthalmology should be made, providing a suitably annotated compendium of what was reported during the past year in each particular field. These reports should be done by an expert in each field, who would purposely inject his own criticism into the report, confirming this with appropriate data. The reader would thus enjoy the benefit of seeing the field through the eyes of an expert,

Read before the Section on Ophthalmology at the 102nd Annual Meeting of the American Medical Association, New York, June 2, 1953.

1. Verhoeff, F. H.: American Ophthalmology During Past Century, Arch. Ophth. **39**: 451-464 (April) 1948.

and would be less likely to be misled by reports that only an expert could properly evaluate. 6. Reviews of books may range from a simple notice of publication to a lengthy critical analysis of a book. Such reviews would best not be signed, in order to allow the reviewer freedom

TABLE 1.—*American Ophthalmologic Journals*

First Publication Date	Name of Journal	Date Publication Suspended
1862	American Journal of Ophthalmology.....	1864
1864	Transactions of American Ophthalmological Society *	....
1869	Archives of Ophthalmology * †.....	....
1884	American Journal of Ophthalmology *.....	....
1889	Journal of Ophthalmology, Otology and Laryngology	1929
1890	American Ophthalmological Monographs.....	1891
1891	Transactions of Section on Ophthalmology of American Medical Association *.....	....
1891	Ophthalmic Record.....	1917
1892	Annals of Ophthalmology ‡.....	1917
1895	Annales d'Oculistique (English edition).....	1896
1896	Transactions of American Academy of Ophthalmology and Otolaryngology *.....	....
1896	Journal of Eye, Ear and Throat Diseases.....	1905
1900	Ophthalmologist	1909
1904	Ophthalmic Yearbook §.....	1926
1904	Ophthalmology: Essays, Abstracts.....	1917
1907	Journal of Ophthalmology and Oto-laryngology	1917
1911	Ophthalmic Literature.....	1917
1913	Transactions of Pacific Coast Oto-Ophthalmological Society *.....	....
1917	Journal Optical Society of America *.....	....
1920	American Journal of Physiological Optics.....	1926
1922	Eye, Ear, Nose and Throat Monthly *.....	....
1923	International Survey of Ophthalmology, Otology, and Rhinolaryngology.....	1925
1926	Transactions of Indiana Academy of Ophthalmology and Otolaryngology * ‖.....	....
1938	Digest of Ophthalmology and Otolaryngology *	....
1945	Quarterly Review of Ophthalmology * ¶.....	....
1948	Transactions of Pennsylvania Academy of Ophthalmology and Otolaryngology *.....	....
1951	American Orthoptic Journal * ‡.....	....

* Indicates the journal is still being published.

† From 1869 to 1879 this journal was published as the Archives of Ophthalmology and Otolaryngology.

‡ Vol. 5 was published as the Annals of Ophthalmology and Otolaryngology.

§ This journal was published under various titles.

‖ No volumes earlier than that covering the ninth annual meeting appear to have been published.

¶ This review now appears in the International Record of Medicine and General Practice Clinics.

‡ This journal is a supplement to the Transactions of the American Academy of Ophthalmology and Otolaryngology.

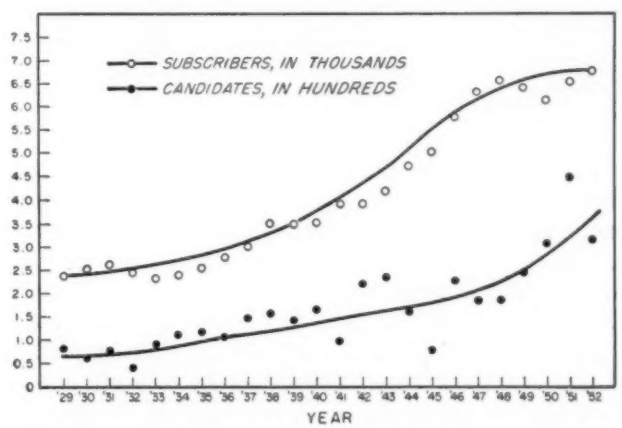
TABLE 2.—*Ophthalmic Journals Started in Each Decade and Number Still in Existence*

Decade	No. Started	No. Existing
1860-1870.....	3	2
1870-1880.....	0	0
1880-1890.....	3	1
1890-1900.....	6	2
1900-1910.....	4	0
1910-1920.....	3	2
1920-1930.....	4	2
1930-1940.....	1	1
1940-1950.....	2	2
1950-.....	1	1

to express an opinion. 7. News, announcements of meetings, reports of meetings with discussions of papers presented, obituaries of prominent men, honors bestowed, and appointments to teaching positions and specialty boards all fall within the province of a journal whose job it is to disseminate such news. 8. Editorials may be of almost any nature, ranging from impersonal comment of general interest to a biased stand on some controversial subject with the avowed intention of molding public opinion. 9. Letters to the editor generally take the form of criticizing some article previously published in a particular journal. It would seem only fair to allow the author criticized an opportunity of a rebuttal in the same journal, preferably in the same issue. 10. Historical, sociological, and other cultural data pertaining to ophthalmology should be published. 11. Symposiums, such as the valuable contributions made during the past few years by the Academy of Ophthalmology and Otolaryngology and published in the transactions under Dr. Benedict's direction should be published. Monographs that could not find an outlet through commercial publishing houses are also suitable for publication.

FUTURE DEVELOPMENTS

It may be said that all the functions listed are being satisfactorily performed by the existing journals, but I would like to point out some deficiencies and suggest ways by which these services might be improved. The most important function of a scientific periodical is the publication of scientific papers. Although the publication of a manuscript in a journal does not necessarily guarantee that the facts it sets forth and the conclusions drawn by the author are correct, or are even agreed to by the editorial board, publication itself sets a value on the paper in the eyes of the readers to the extent that it has met the standards for acceptance of that journal. In the basic sciences these standards have always been high, and it is unusual for an article to appear that does not have merit. The readers expect that the judgment of the editorial board will be good, and if unworthy manuscripts are frequently published, the journal's reputation soon suffers. It is curious that this same feeling of responsibility on the part of the editorial board has not dominated journals in the clinical fields to the same extent that it has in the basic sciences. It is high time that it does so. The subscribers to an ophthalmologic journal have the right to expect the same careful scrutiny of all papers by the editorial board and rejection by that board of any paper that fails to give reasonable evidence



Comparison of number of subscribers to ophthalmic journals and the number of candidates who applied to take the American Board of Ophthalmology examination from 1929 through 1952.

on which the author's conclusions are based. We have all seen manuscripts published in which claims were made for the successful treatment of some disease without adequate proof being submitted by the author. This usually consists of failure to provide suitable controls or lack of proper statistical analysis of the data, as I have pointed out in previous editorials.[2] A shocking example of this was the recent publication of an article [3] claiming successful treatment of cataracts with fish lens protein. There was not the slightest evidence presented in this paper to substantiate the author's claim. No rebuke can be too severe to an editorial board that allows such an unworthy article to be published, especially when, as in this case, the claims were of such widespread public interest that they were picked up and heralded by the lay press throughout the country.

Another obligation of a journal is the rejection of manuscripts that contain nothing new and that merely burden the reading public with a rehash of what probably has been better written before. Unfortunately, publication is too often just as easy for the person with a desire to advertise himself as it is for the author who has something to contribute to his fellows. It is the moral obligation of a journal to reject scientific "potboilers" regardless of how illustrious the author may be. Perhaps the easiest way to lose friends is to become a chief editor.

Publication of papers is one of the chief ways by which a physician attains prominence among his colleagues, who too often thoughtlessly consider quantity of publication rather than quality the criterion by which to judge him. Let us beware of the prolific writer whose pronouncements contain very dilute solutions of thought. Let editorial boards in particular protect the reader from too ambitious authors. The sole purpose of authorship should be to share things of value. In its early days a local medical society, to which I still belong, used to fine its members $25 if they did not publish at least two papers each year. I am inclined to believe that it would now be appropriate to fine each member $25 for each paper in excess of two published during a year.

Finally, the editorial boards of all the journals in this country should be in frequent communication with each other to review problems that are vital to ophthalmology and to agree among themselves how each should specialize and how each can be helpful for the good of all. No new journal should be contemplated without mutual approval. Overspecialization has its dangers. To start a new journal for neuro-ophthalmology, for strabismus, or for research saps some of the strength of each of the existing journals and should be permitted only if it can be shown that the good that would follow compensates for the harm done. It is pleasant to think that ophthalmology is being well served by the existing journals, but their editorial boards should be ever mindful that the ultimate state of perfection in ophthalmic journalism is not yet a reality.

313 S. 17th St.

2. Adler, F. H.: editorial, A. M. A. Arch. Ophth. **45**: 365-366, 1951.
3. Shropshire, R. F., and others: Nonsurgical Treatment of Cataract, Science **116**: 276-278 (Sept. 12) 1952.

CLINICAL NOTES

SEPARATION AND SURVIVAL OF XIPHOPAGUS TWINS

Hyatt Reitman, M.D.
Earl E. Smith, M.D.
and
Jac S. Geller, M.D., Cleveland

Symmetrically conjoined twins are rare. Potter [1] reports only one case in the course of over 60,000 deliveries at Chicago Lying-In Hospital since 1931. Our case is the first occurring at Mount Sinai Hospital in the course of approximately 35,000 deliveries. Potter states that in all symmetrically conjoined twins, except the rare xiphopagus type in which only the lower portions of the sternum are fused, some of the viscera are shared by the two infants and surgical separation is impossible. Eastman [2] reports three authentic cases (omphalopagus type) in which surgical separation was accomplished with the survival of one twin and the death of the other. Further, he states that no case has been reported with the separation and survival of both. A survey of the literature also reveals no reported case of survival of both twins.

It is not within the province of this paper to discuss conjoined twins; the subject is well handled in Potter's "Pathology of the Fetus and the Newborn."[1] We feel, however, that this case is of interest primarily since the conjoined twins were separated and both survived.

REPORT OF CASE

A 27-year-old woman, para 1 and gravida 2, whose expected date of confinement was Jan. 15, 1953, was first seen by one of us (H. R.) when she was two months pregnant. Her previous delivery was vaginal and uncomplicated. The infant was a living boy free of anomalies.

The physical examination revealed a well-developed, well-nourished woman whose general physical condition was good and who had no complaints. The uterus was enlarged to the size of a two month pregnancy, the adnexae were clear, and the cervix was normal. Pelvic measurements were normal. The red blood cell count was 3.51 million per cubic millimeter, and the hemoglobin level 10 gm. per 100 cc. The Kline test was negative, the Rh. factor positive, and the urine free of sugar and albumin. Therapy with Mol-Iron, a hematinic containing molybdenum oxide, 3 mg., and ferrous sulfate, 195 mg., per tablet or teaspoonful, was begun and was continued throughout the pregnancy. Blood pressures and urine specimens were normal until delivery. On Sept. 4, 1952, a clinical diagnosis of a twin pregnancy was made, with both babies presenting as breeches. This was confirmed by roentgenograms made on the same date. Clinical examination on Nov. 18, 1952, revealed that one of the twins was now in a cephalic presentation. Thus, despite the fact that the twins were conjoined, twin A had rotated through an arc of 180 degrees in its spontaneous conversion from a breech to a cephalic presentation. On Dec. 11, 1952, the membranes ruptured spontaneously. The patient did not go into labor, however, and she was admitted to the hospital the next day for observation. Examination revealed the presence of two fetal hearts with

From the obstetric, pediatric, and surgical services, Mount Sinai Hospital, Cleveland.

1. Potter, E. L.: Pathology of the Fetus and the Newborn, Chicago, Yearbook Publishers, Inc., 1952, p. 184.
2. Eastman, N. J.: Williams Obstetrics, ed. 10, New York, Appleton-Century-Crofts, Inc., 1950, p. 619.

engagement of the head of the first twin, the cervix 3 cm. dilated with 50% effacement. Laboratory studies showed a red blood cell count of 3.1 million and a hemoglobin level of 10.3 gm. The patient's blood was typed and cross matched. Prophylactic penicillin therapy, 300,000 units twice a day, was instituted.

On Dec. 14, 1952, at noon, approximately 48 hours after admission, the patient went into labor spontaneously. At 1:30 p. m., examination revealed the cervix to be completely dilated with the presenting part in a low occiput transverse position at 2+ station. In view of the anticipated prematurity of the infants, the patient was not given any analgesia. The patient's cervix remained completely dilated without any further descent or rotation of the infants for one hour; she was then taken to the delivery room. A spinal anesthetic that consisted of 50 mg. of procaine was administered. After that, the patient was prepared for delivery. The presenting head was rotated manually with ease, but a moderate amount of traction was required to deliver it. External rotation brought the shoulders into the anterior-posterior axis of the pelvis. Moderate traction with fundal pressure failed to deliver the shoulders for a few minutes. Suddenly, the feet of the second twin appeared at the introitus, and the possibility of conjoined twins was first entertained. A deep ether anesthetic was given in order to obtain greater relaxation of the uterus. Manual examination failed to reveal any attachment of the twins. In view of the small diameter of the fusion area, as seen after the delivery, this was understandable. Further traction with fundal pressure permitted delivery of the shoulders and chest of the first twin. At the same time, the lower extremities, pelvis, and lower abdomen of the second twin delivered, and the xiphopagus attachment was noted. Delivery of the first twin was completed and the baby placed transversely across the lower abdomen of the mother. Care was taken to avoid tearing the band of attachment between the twins. Delivery of the second twin up

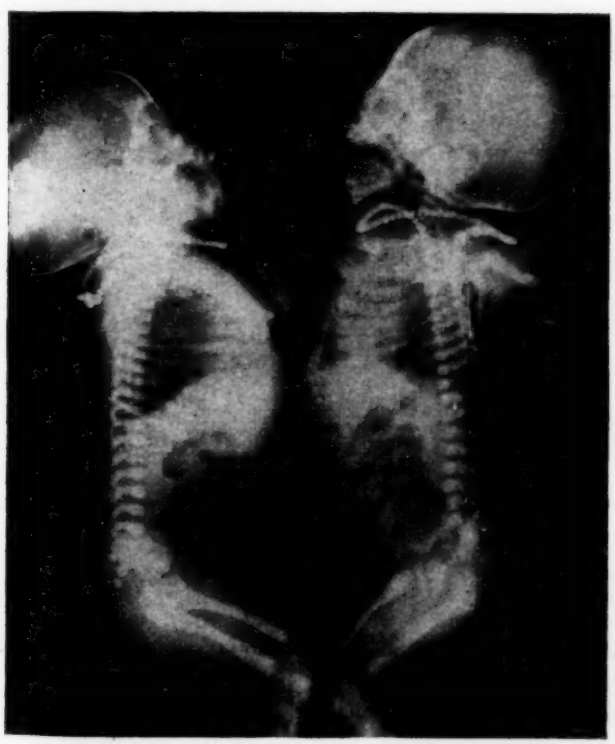


Fig. 1.—Roentgenogram of conjoined twins showing soft tissue connection, but no evidence of bony bridging, in area of inferior sternum.

to the shoulders was accomplished easily, and, with the second twin's head in an occiput posterior position, the forceps were applied and the delivery completed without difficulty. The large single placenta was delivered spontaneously within five minutes, and the uterus contracted very firmly. The estimated blood loss was 200 cc. A solution, 1,000 cc. of 5% dextrose in water containing 1 cc. of oxytocin (Pitocin) together with 500 cc. of whole blood, was given intravenously. The left mediolateral episiotomy that was made at the beginning of the delivery was repaired. The postpartum course was uneventful, and the patient was discharged six days later.

Examination by one of us (E. E. S.) shortly after delivery showed twin girls one month premature joined in the region of the xiphoid process by a band of tissue measuring about 1 cm. horizontally and approximately 4 cm. vertically. Palpation of the band revealed a bridge of cartilage in its upper portion. The lower segment of the band was torn through, leaving an open laceration in the upper abdominal wall of each infant. Examination revealed two normal infants, except for the above and the fact that twin B had a loud systolic murmur heard in the region of the second left interspace parasternally. It was thought at the time to be a patent ductus arteriosus or a hemic murmur. The infants were wrapped in diapers and placed in an incubator.

Fig. 2.—Appearance of twin girls approximately nine months after xiphopagus connection was severed.

Simultaneous electrocardiograms taken by Dr. Bernard Brofman revealed normal rates and rhythms that were asynchronous, thereby indicating separate circulatory systems. Roentgenograms revealed conjoined twins with a soft tissue connection in the region of the inferior portion of the sternum without definite evidence of bony bridging (fig. 1). Aside from this, no definite abnormalities were noted.

After the administration of vitamin K, penicillin, and streptomycin, the twins were taken to surgery. They were placed on the operating table so that twin A was on her right side and twin B on her left side. Oxygen, without anesthesia, was administered continuously throughout the entire procedure. The abdomens of both infants, as well as the connecting band, were prepared with benzalkonium (tincture of Zephiran) chloride. By sharp dissection, one of us (J. S. G.) made an incision through the skin of the band. The parietal peritoneum of twin A was visualized, but the peritoneal cavity was not entered. A few bleeders were clamped, cut, and ligated with 0000 absorbable chromic surgical sutures. The cartilaginous bridge between the two babies was severed with scissors, and the posterior skin was cut with a scalpel. This completely separated the two babies. A moist sponge was placed over the defect in the abdominal wall of twin A. The defect in twin B was repaired first. Subcutaneous tissues were brought together over the xiphoid process by means of 0000 absorbable chromic surgical sutures, and skin edges were approximated by means of 00000 silk interrupted sutures. A dry sterile dressing was applied, and the infant was taken from the operating room. The defect in twin A was repaired in a like manner. Both infants withstood the procedure well.

The infants were given nothing to eat by mouth for 18 hours and fed Karo water every 3 hours for two feedings

and then a standard evaporated milk formula every 4 hours. The infants were placed in an incubator, and oxygen was given continuously for six hours postoperatively. Penicillin and streptomycin were given for three days. Twin A weighed 2,410 gm. the morning after delivery and was discharged weighing 2,520 gm. Twin B weighed 2,210 gm. the morning after delivery and was discharged weighing 2,275 gm. The murmur heard on the first day became very loud (grade 3). A questionable thrill was present. The heart was not enlarged. On the third day of life generalized cyanosis was noted, and it was evident that a congenital heart of the cyanotic type was present. At this time, an auricular septal defect or a tetralogy of Fallot was considered. The babies were discharged after 14 days. To aid the mother in the preparation of formulas liquid Similac was prescribed. At the present time, the infants are nine months of age and very well (fig. 2).

SUMMARY

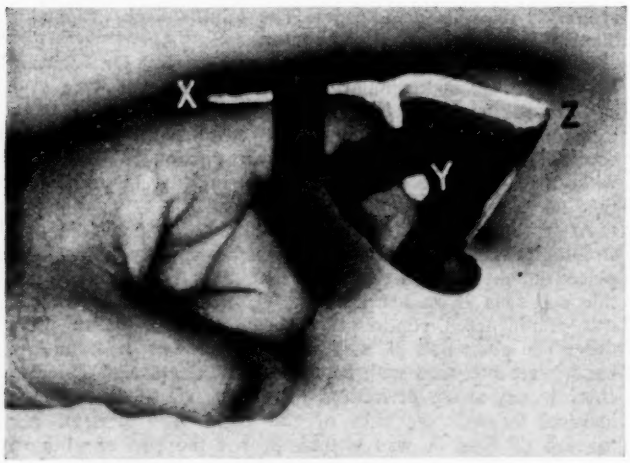
The delivery and surgical separation of xiphopagus twin girls is described. Both twins survived after being separated.

10515 Carnegie Ave. (6) (Dr. Reitman).

NEW SPLINT FOR MANAGEMENT OF MALLET FINGER

Louis Spigelman, M.D., Los Angeles

The mallet finger injury is frequently seen in general practice. The injury consists of an avulsion of the extensor tendon of a finger from its insertion, frequently with a fragment of bone, into the base of the distal phalanx. The extensor tendon of the finger divides over the back of the proximal phalanx into a central portion inserting in the base of the middle phalanx and two lateral slips that fuse together and insert on the base of the distal phalanx. When this latter insertion is torn, retraction takes place.



Splint in place (black adhesive tape used for illustrative purposes only).

Any principle of treatment for this condition must include this factor, and in treating the condition the raw area at the base of the distal phalanx must be opposed to the retracted extensor tendon. This is possible only if the distal interphalangeal joint is hyperextended while the proximal interphalangeal joint is kept at approximately 60 degrees of flexion.[1]

The difficulty of maintaining this position is well known, and a practical splint capable of maintaining this position has not been devised. Former treatment consisted of the use of a plaster of paris cast that held the terminal phalanx in hyperextension and the proximal joint at approximately 60 degrees of flexion. Anyone who has attempted to apply this type of cast realizes the difficulty of application and maintenance.

The illustrated splint (see figure) has been found to maintain the necessary position without difficulty. The splint is made easily from a strip of galvanized sheet iron or aluminum and then is padded and applied with adhesive tape.

In applying the splint, one part (*X* of the figure) is taped to the proximal phalanx. The circulation should not be restricted. The horizontal portion (*Y*), which rests against the dorsal aspect of the middle phalanx, must be extremely well padded with a strip of felt. It is important to make sure that the edge of the splint does not dig into the surface. A small pad is applied to the pulp of the distal phalanx, and then the adhesive sling is made and anchored to the upright (Z). The splint can be easily adjusted and changed, especially if the patient is told how to maintain the joints in the required position. The splint should remain in place for six weeks.

6317 Wilshire Blvd.

1. Bunnell, S.: Surgery of the Hand, Philadelphia, J. B. Lippincott Company, 1944, p. 355-356, 490-493. Watson-Jones, R.: Fractures and Joint Injuries, ed. 3, Edinburgh, E. & S. Livingstone, 1946, vol. 2, p. 592-595.

COUNCIL ON PHARMACY AND CHEMISTRY

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

R. T. STORMONT, M.D., *Secretary.*

Quinine Carbacrylic Resin.—Diagnex (Squibb).—The quinine salt of a polyacrylic carboxylic acid resin containing about 1.85% of quininium ion.

Actions and Uses.—Quinine carbacrylic resin, a complex of quininium ion and carbacrylic resin, is employed as an indicator for the detection of gastric anacidity (achlorhydria) without intubation. After oral administration of the drug, the quinine in the resin is displaced by the hydrogen ions of free hydrochloric acid that may be present in the stomach. Approximately 1% of the displaced quinine is excreted in the urine within two hours following administration of the resin. A stimulant to gastric secretion is given one hour before administration of the resin. Urine voided during that hour serves as a control sample. Assay of the quinine content of urine specimens, collected at the end of the one hour control period and two hours after administration of the resin, is performed as an indication of the presence or absence of free hydrochloric acid in the stomach.

Assay of the urine for quinine is based on the measurement of its fluorescence in aqueous extract under ultraviolet light. Estimation of the urinary quinine level by this method may be carried out with a photoelectric fluorophotometer for direct calculation from a predetermined standard curve, or by visual comparison with freshly prepared standard solutions containing known amounts of quinine. If the fluorescence of the control sample corresponds to 15 mcg. or more

of quinine, the entire test should be disregarded. It indicates that the patient is excreting excessive amounts of blank fluorescent materials which may result from the use of quinine or related drugs, or vitamins of the B-complex or the steroid compounds. The use of any such medication should be discontinued for one week and the test repeated. If the result from the control sample corresponds to 5 to 15 mcg. of quinine, the result from the test specimen should be corrected by subtracting the amount found in the control. If the amount in the control is less than 5 mcg., it may be ignored. The interpretation of the absence or presence of free gastric hydrochloric acid is as follows: Free gastric hydrochloric acid is absent if 15 mcg. of quinine or less is excreted in the two hour urine specimen. Free gastric hydrochloric acid is present if more than 15 mcg. of quinine is excreted in the two hour urine specimen. A range of quinine between 15 and 30 mcg. signifies a low degree of gastric acidity.

The quinine carbacrylic resin test does not furnish exact quantitative results; however, it is convenient for screening patients with minor gastric symptoms that are not considered sufficiently significant to warrant the discomfort of intubation gastric analysis or other more expensive diagnostic procedures. It should not be employed in lieu of more extensive examinations whenever these may be indicated. Until the physician has acquired experience with the resin method, doubtful results should be confirmed by repetition of the test after an interval of five to seven days. The resin test method for achlorhydria is considered useful for the diagnosis of suspected cancer of the stomach, pernicious anemia, and gastric polyps.

Quinine carbacrylic resin is of low toxicity, but it should not be given to patients with an idiosyncrasy to quinine or related drugs.

Dosage.—Quinine carbacrylic resin is administered orally as a single test dose of 2 gm. in the form of granules. Patients who are given the test should be instructed not to eat after midnight preceding the day of the test. On the morning of the test the patient should empty the bladder and discard the urine. Breakfast is withheld until the test is completed. The contents of a 0.25 gm. capsule of caffeine and sodium benzoate is stirred and taken in one-half glass of water followed by another one-half glass of water or cup of coffee or tea, without cream, milk, or sugar. One hour later or as soon thereafter as is possible, the patient voids and saves this specimen in a bottle marked "urine control." Then the 2 gm. dose of the resin is stirred well and taken in one-fourth glass of water (without chewing the granules), followed by another one-fourth glass of water. Exactly two hours after taking the resin, the urine should be voided and the entire amount saved in a bottle marked "urine sample." The bladder should be completely emptied each time; if urination ahead of the scheduled time is necessary, it should be added to that passed at the end of the designated period. After the last specimen is completed, the patient may eat breakfast. The two specimens should be delivered to a clinical laboratory as soon as it is convenient.

If desired, an injection of histamine phosphate may be used in place of oral caffeine as a stimulant to gastric secretion and the control specimen collected after a 45 minute period.

Tests and Standards.—

Physical Properties: Quinine carbacrylic resin is a buff, odorless, tasteless, free-flowing, amorphous, granular solid. It is practically insoluble in dilute acids and alkalis, alcohol, ether, and water.

Identity Tests: A 0.002% solution of anhydrous quinine hydrochloride, prepared from quinine carbacrylic resin as directed in the spectrophotometric assay for quininium ion, exhibits ultraviolet absorption maxima at about 318 and 346 mμ. [specific absorbancy, E(1%, 1 cm.), about 1501, and minima at about 270 and 325 mμ. The ratio of the absorbancies at 318 and 346 mμ. is 1.17-1.28.

Purity Tests: Dry about 1 gm. of quinine carbacrylic resin, accurately weighed, at 105° for 2 hours: the loss in weight does not exceed 5.5%.

Char about 1 gm. of quinine carbacrylic resin, accurately weighed, cool the residue, add 1 ml. of sulfuric acid, heat cautiously until evolution of sulfur trioxide ceases, ignite, cool, and weigh: the residue does not exceed 0.2%. Save the residue for the heavy metals test.

Dissolve the residue from the ignition by heating on a steam bath with 20 ml. of water containing 2 ml. of diluted acetic acid. Run a *U. S. P. heavy metals test:* the amount of heavy metals does not exceed 20 ppm.

Assay: (Quininium Ion) Prepare a 0.002% solution of anhydrous quinine hydrochloride from quinine carbacrylic resin as follows. Transfer to a 250 ml. glass-stoppered Erlenmeyer flask about 1 gm. of quinine carbacrylic resin, accurately weighed, add 100 ml. of 0.3% hydrochloric acid, accurately measured, and shake the flask mechanically for 15 min. Centrifuge a portion of the mixture. Transfer to a second 100 ml. volumetric flask 10 ml. of the clear centrifugate, fill to the mark with 0.3% hydrochloric acid, and mix. Spectrophotometrically determine the absorbancy in a 1 cm. quartz cell at 346 mμ. using 0.3% hydrochloric acid as a blank. The concentration of anhydrous quinine hydrochloride in the solution in mg./ml. = absorbancy ÷ 15.0. The amount of anhydrous quinine hydrochloride is not less than 1.84 nor more than 2.25%, equivalent to not less than 1.66 nor more than 2.03% of quininium ion.

Dosage Forms of Quinine Carbacrylic Resin

GRANULES. The resin granules respond to the tests and standards for the active ingredient in the monograph for quinine carbacrylic resin.

E. R. Squibb & Sons, Division of Mathieson Chemical Corporation, New York.

Granules Diagnex: A quininium indicator resin, each test containing a 2 gm. packet of quinine carbacrylic resin and a 0.25 gm. capsule of caffeine and sodium benzoate. U. S. Trademark 568,004.

Amphetamine Sulfate-U.S.P. (See New and Nonofficial Remedies 1953, p. 187)

Smith, Kline & French Laboratories, Philadelphia.

Spansule Sustained Release Capsules Benzedrine Sulfate: 15 mg. U. S. trademarks 562,210 and 337,407.

Hexamethonium Chloride (See New and Nonofficial Remedies 1953, p. 241)

Burroughs Wellcome & Company, Inc., Tuckahoe, N. Y.

Solution Hexameton Chloride: 10 cc. vials. A solution containing 0.135 gm. of hexamethonium chloride (0.1 gm. hexamethonium ion) in each cubic centimeter. Preserved with 0.1% methylparaben. U. S. trademark 572,762.

Hyaluronidase (See New and Nonofficial Remedies 1953, p. 321)

E. R. Squibb & Sons, Division of Mathieson Chemical Corporation, New York.

Enzodase Lyophilized: Vials containing 150 or 1,500 turbidity-reducing units of powdered hyaluronidase. Preserved with 0.02 mg. and 0.2 mg. of thimerosal, respectively.

Hydrocortisone Acetate (See New and Nonofficial Remedies 1953, p. 351)

Merck & Co., Inc., Rahway, N. J.

Ointment Hydrocortone Acetate: 5 gm. tubes. An ointment containing either 10 mg. or 25 mg. of hydrocortisone acetate in each gram.

Menadione-U.S.P. (See New and Nonofficial Remedies 1953, p. 510)

Lincoln Laboratories, Inc., Decatur, Ill.

Solution Menadione in Oil with Benzyl Alcohol 2%: 15 cc. vials. A solution in sesame oil containing 2 mg. of menadione in each cubic centimeter. Preserved with 0.5% chlorobutanol.

Meth-Dia-Mer-Sulfonamides (See New and Nonofficial Remedies 1953, p. 110)

Lloyd & Dabney Company, Inc., Cincinnati.

Tablets Sulfaloid: 0.25 gm. Each tablet contains 83 mg. each of sulfadiazine, sulfamerazine, and sulfamethazine.

0.5 gm. Each tablet contains 0.167 gm. each of sulfadiazine, sulfamerazine, and sulfamethazine.

Methylbenzethonium Chloride (See New and Nonofficial Remedies 1953, p. 83)

Chemo Puro Manufacturing Corporation, Long Island City, N. Y.

Powder Methylbenzethonium Chloride: Bulk; for manufacturing use.

Naphazoline Hydrochloride-U.S.P. (See New and Nonofficial Remedies 1953, p. 200)

Ciba Pharmaceutical Products, Inc., Summit, N. J.

Solution Privine Hydrochloride 0.05%: 15 cc. nebulizers.

Phenindione (See THE JOURNAL, May 9, 1953, p. 142)

Gane's Chemical Works, Inc., Carlstadt, N. J.

Powder Phenindione: Bulk; for manufacturing use.

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OVERNUTRITION AND UNDERNUTRITION

In spite of the vast amount of research in nutrition that has been carried on in recent years, little work has been done to determine the ideal plane of nutrition for different age and occupational groups. Slowly, however, bits of evidence are being fitted into place. McCance [1] has assembled some pertinent facts that are worthy of thoughtful consideration. He points out that the drive to eat and drink are essential to survival but that the control of this drive is not easily understood or, if understood, is not easily accepted and put into practice by many persons in our present civilization. Obesity has never been a problem in wild animals in their native state or in primitive man, because food was hard to obtain and it was a long time between the more lavish feasts. With the advent of modern methods of providing food, however, a certain amount of prosperity is often reflected in a tendency to overeat. The eating of only very slightly more food each day than is required to supply the energy expended will in a few years result in overweight. This and reduced activity account for the greater average weight of men of 45 as compared to those of the same height at 25 years. In the main, obesity depends on an opportunity for leisure and a plentiful supply of food. Although a sense of fulness in the stomach and the general sedation that accompanies it causes most persons to stop eating, the pleasant drowsiness induced by overeating is either consciously or unconsciously sought by certain persons with an emotional imbalance, and these are the overweight patients who are hardest to treat by dietary restrictions alone.

That the effects of obesity are serious is amply supported by the statistics of insurance companies. The obese are poor surgical risks and are predisposed to hypertension, diabetes, and atherosclerosis. It has been shown that in persons with a high serum cholesterol level atherosclerosis develops at an earlier age than in persons with normal or low levels. On the basis of this observation it was prematurely assumed in some quarters that the progress of atherosclerosis could be retarded by putting patients on a low cholesterol diet. This now appears not to be true, because both fats and cholesterol are readily synthesized in the body and neither increasing nor decreasing the cholesterol in the diet appreciably affects the serum cholesterol level. On the other hand, it is true that this level increases with age and with increases in body weight. Walker [2] has shown that, contrary to popular belief, there is a lowering of serum lipids with rapid weight loss even though liberal amounts of cholesterol are present in the diet. A nearly fat-free diet is not essential to rapid weight loss and may actually have a harmful effect on the body economy. It may be concluded then that any kind of diet that causes overweight will further atherosclerosis and that the best preventive measure is to remain at or slightly below the "ideal" weight.

Undernutrition may be due to famine, chronic debilitating disease, or to psychogenic causes associated with depression. Severely undernourished persons feel cold all the time, sleep poorly, develop a mild anemia, and as the condition progresses their skin becomes dry and scaly; they have diuresis that is increased when they assume a recumbent position, and they have diarrhea, edema, enlargement of the parotids, and gynecomastia. Severely undernourished persons at first become restless and overactive. During famines, any food that is acquired is taken home and shared with the whole family but is hidden from the neighbors. As conditions grow worse, persons no longer share with anyone else and steal from members of their own family. They may even commit murder for a crust of bread. Finally, if conditions are not relieved, complete apathy follows and death ensues.

The offspring of a mother who is undernourished resemble prematures even at full term. Undernourished children grow slowly as measured by height, weight, and "bone age." This slows their maturation and prolongs their life. Animal husbandmen have bred and fed their animals for rapid maturation. McCance believes our political husbandmen may be doing the same to our children by providing midmorning milk in school. Here it would seem that the author ignores the fact that many a listless, apparently retarded child when put on a school program of midmorning milk becomes alert and shows normal or superior intelligence. Can it be that he is placing longevity above accomplishment?

The ideal weight for a given height cannot, in the light of present knowledge, be determined categorically. It varies somewhat with the individual, his activity, age, and sex. Furthermore, most healthy persons voluntarily control their weight at the level they prefer. However, these observations and other findings require further study before many of the questions pertaining to nutrition are answered satisfactorily. Overnutrition and undernutrition constitute an almost overwhelming challenge for most of the world.

1. McCance, R. A.: Overnutrition and Undernutrition: I. Causes, Lancet **2**: 685 (Oct. 3) 1953; Overnutrition and Undernutrition: II. Effects, ibid. **2**: 739 (Oct. 10) 1953.

2. Walker, W. J.: Relationship of Adiposity to Serum Cholesterol and Lipoprotein Levels and Their Modification by Dietary Means, Ann. Int. Med. **39**: 705 (Oct.) 1953.

POSTGRADUATE CONTINUATION COURSES FOR PHYSICIANS

The semiannual listing of postgraduate continuation courses for physicians, covering the period January 1 to July 15, 1954, appears elsewhere in this issue. These data, prepared as a regular service by the Council on Medical Education and Hospitals, list 1,034 courses varying in length from a few days to several months and extending to full academic years. The listing includes 539 courses offered on a full-time basis, 476 part-time courses, and 19 courses arranged to suit the convenience of the physician student. For this period, postgraduate education in some form will be offered in 35 states, the District of Columbia, and Puerto Rico. The subjects include 40 areas in the field of clinical medicine and 8 basic science subjects. There are opportunities for the physician in general practice as well as the specialist. Many courses are designed to be of assistance to physicians preparing for specialty board certification. The courses that are available for this purpose are specifically designated by a footnote. In addition, a series of courses for military personnel at medical installations are included. In a number of instances, the series is made available to civilian personnel. Notably, among the opportunities provided in this listing is a course in civilian defense.

Medical Schools, state medical societies, hospitals, graduate schools of medicine, postgraduate institutes, and state chapters of the American Academy of General Practice continue to be active in presenting this type of postgraduate education. One hundred and fifty-five agencies are participating in sponsoring the courses in this listing, including 38 medical schools, 15 hospitals, 11 graduate schools of medicine, 17 special societies, 13 state and county medical societies, 4 state health departments, 5 academies of general practice, 4 government agencies, and 1 school of public health. The remaining courses were given by liberal arts colleges, institutes, assemblies, seminars, alumni associations, foundations, and groups established for the purpose of providing postgraduate training. For many of the courses a combination of these agencies participated in sponsoring the opportunities listed. Additional contributing and sponsoring agencies are specifically indicated at the conclusion of the description of the courses.

In addition, the Council is currently engaged in the preparation of a comprehensive report on postgraduate education based on a field study throughout the country consisting of facts, figures, and opinions. A comprehensive questionnaire has recently been sent to 18,000 physicians to obtain additional data from the point of view of the physician who has taken continuation work. The Council hopes that all who have received this questionnaire will cooperate in order that this highly important aspect of its study can be adequately analyzed. Institutions and organizations offering postgraduate continuation courses for physicians are invited to announce their courses in the Council's semiannual listing.

PREVENTION OF FIREARM ACCIDENTS

Although firearms are owned and used safely by most Americans, unfortunately, through either ignorance or carelessness, many of them fail to exercise adequate precaution in their handling. Each year firearm accidents take about 2,200 lives in the United States, the death toll reaching its peak during the hunting season. The firearm fatalities among hunters are due to the discharge of guns when men carrying loaded weapons trip, stumble, or handle them carelessly while climbing over or under a fence; loading and unloading weapons; walking into the line of fire; and being mistaken for game. According to a recent study,[1] more hunters are fatally injured by the guns of their companions than by the weapons of other hunting parties, and at least four out of every five hunters reported killed by others were hit by members of their own group.

A majority of firearm deaths in and about the home, many of which occur in young children, result from the dangerous practice of playing with a gun—an "unloaded" gun frequently being pointed and fired at the victim—and from the accidental discharge of firearms while they are being cleaned, repaired, examined, or demonstrated. Some lives are lost during a scuffle for the possession of guns, while others are needlessly sacrificed as the result of a game called "Russian roulette," in which the cylinder of a gun containing but one cartridge is spun around, the participant pointing the gun at his head and pulling the trigger on the chance that it is opposite an empty chamber.

Since firearm accidents obviously represent a needless loss of life, an organized effort should be made by the people of the United States to reduce their incidence. This could be accomplished by adopting three simple measures: (1) leaving no firearms where young children can get at them; (2) not permitting inexperienced hunters to go afield without proper supervision; and (3) constantly emphasizing the necessity for caution in handling guns safely.

CONTEMPORARY OPHTHALMIC JOURNALISM

Elsewhere in this issue, Adler traces, evaluates, and speculates on the past, present, and future of ophthalmic journalism in the United States. Ever since the first American journal devoted exclusively to ophthalmology appeared in 1862, subsequent journals have been published in response either to the growth of scientific organizations or to the increasing number of physicians specializing in ophthalmology. Ophthalmic periodicals attained their numerical height at the turn of the present century, but since then the number has gradually fallen off; of 27 journals published since 1862, only 13 have survived.

How well these 13 periodicals now extant carry out their functions and obligations to ophthalmologists at large can be determined readily enough. Since no single ophthalmic journal can conceivably perform all functions equally well, it is not surprising that specialization

1. Firearm Accidents Can Be Prevented, Statist. Bull. Metrop. Life Insur. Co. 34:7 (Sept.) 1953.

has developed in the interests and content of the various journals in the field. In general, the functions of contemporary ophthalmic journals include such varied items as the publication of original scientific manuscripts, the description of new therapy and new instruments, the recording of new or rare disease entities, the annual review of specific topics, reviewing of books, and the publication of abstracts of current foreign and American literature, news of interest to ophthalmologists, editorial comment, correspondence to the editor, symposiums, and historical and sociological data pertaining to ophthalmology.

While these functions are, as a rule, performed in a satisfactory manner, a number of deficiencies still exist in editorial towers. Articles accepted for publication should have something to say, since the publication of articles that do not possess merit quickly damages the reputation of a journal. Another obligation of a well-edited journal is the rejection of manuscripts that are a rehash of material that has been better written before. Finally, editorial boards of specialty journals published in the United States would strengthen the cause of ophthalmic journalism by communicating frequently with one another for the purpose of analyzing ophthalmic problems that are of vital interest to ophthalmologists. Until these steps are taken, it would be well to acknowledge that perfection in ophthalmic journalism, as in other forms of journalism, is not yet an accomplished fact.

THE ANNUAL GENERAL PRACTITIONER'S AWARD

The Board of Trustees of the American Medical Association announced at the annual Clinical Meeting in St. Louis on December 1 that Dr. Joseph I. Greenwell of New Haven, Ky., had been selected as "general practitioner of the year." Each local medical society has the right to propose a candidate to the state medical society, which in turn selects one name to be submitted to the Board of Trustees, a special committee of which chooses the recipient of the General Practitioner's Gold Medal and a citation of service to his community.

Dr. Greenwell, who is the seventh physician to be so honored, was born in Balltown, Ky., on November 27, 1873. He attended the Nelson County public schools, and received his B.A. and M.A. degrees from Cecilia College and his M.D. from the Louisville Hospital College of Medicine in 1900. For 53 years, he has practiced medicine in Nelson, Hardin, LaRue, and Marion counties, mostly within a 25-mile radius of New Haven, where his office has been throughout this period. The area in which he has practiced medicine includes Kentucky's "Lincoln country"; in fact, Lincoln was born less than 20 miles from the place where Dr. Greenwell now has his office. He has been acting health officer for Nelson County for the last eight years and is a consulting physician for the Louisville and Nashville Railroad and the Gethsemane Abbey.

Since good roads and various other conveniences have come to much of the rugged land only during the last 15 to 25 years, many of the doctor's professional chores have been under conditions almost as primitive as those which prevailed when Abraham Lincoln was born. He has answered calls by horse and buggy, on foot, by rowboat, and even by switch-engine as well as by automobile.

JOSEPH I. GREENWELL, M.D.

The use of the latest recognized scientific knowledge has been evident in all of Dr. Greenwell's professional activities. During World War II he served for four years as examining physician for the Nelson County Selective Service Board. He has rarely missed the annual scientific session of the Kentucky State Medical Association or other opportunities to keep himself informed about advances in medicine. He was in the forefront supporting the establishment of a hospital in Nelson County. Of great professional pride for Dr. Greenwell have been the nearly 4,300 babies he has delivered, of which more than 80 were born this year. Some of these deliveries took place in log cabins and some in the modern and new Flaget Memorial Hospital in Bardstown. Dr. Greenwell has been much interested in organized medicine, has been active at state, district, and county levels. Until his resignation this year, he had served for 30 years as councilor for the fourth district of the Kentucky State Medical Association. He is a past president of the Nelson County Medical and Muldraugh Hill Medical societies and a member of the American Medical Association, the Kentucky State Medical Association, and the Southern Medical Association.

Dr. Greenwell has shown his active interest in the affairs of his community by serving for 25 years as a member of the board of trustees and for 14 years as mayor of New Haven. During his administration as mayor, townspeople saw the construction of New Haven's first sidewalks, the installation of street lights, and the establishment of a public water works. He is a director and vice-president of the Bank of New Haven. With the selection this year of Dr. Greenwell, another family doctor is added to the roster of truly outstanding general practitioners.

ORGANIZATION SECTION

DR. McLESTER RECEIVES NUTRITION AWARD

The Joseph Goldberger award for outstanding contributions in the field of clinical nutrition was awarded November 28 to Dr. James Somerville McLester of Birmingham, Ala., during a meeting in St. Louis of the A. M. A. Board of Trustees. Presented by the A. M. A. through its Council on Foods and Nutrition, the annual award includes a gold medal and $1,000. Dr. McLester was cited for the outstanding role he has played in translating the results of nutrition research into human values and in the integration of nutrition into the teaching of all phases of medicine.

A practicing physician for more than 50 years, Dr. McLester now is associated with his son, Dr. James B. McLester, in the McLester Clinic, Birmingham. His book "Nutrition and Diet in Health and Disease" is widely used in the teaching of nutrition. He is professor emeritus of medicine at the Medical College of Alabama.

Dr. McLester also has been very active in medical society activities for many years. He was president of the American Medical Association in 1935 and was chairman of its Council on Foods and Nutrition. He is the fourth recipient of the award, which is made possible through grants by the Nutrition Foundation, New York. Previously, the presentation was made to Dr. Randolph West, professor of medicine, Columbia College of Physicians and Surgeons, New York; to Dr. Fuller Albright, associate professor of medicine, Harvard Medical School, Boston; and to Dr. William Henry Sebrell Jr., director, National Institutes of Health, U. S. Public Health Service, Bethesda, Md.

SCIENTIFIC EXHIBIT, SAN FRANCISCO MEETING

Plans for the Scientific Exhibit at the San Francisco Meeting are progressing rapidly. The 20 sections of the Scientific Assembly are arranging groups of exhibits dealing with their respective specialties, and there will also be several features, including cardiovascular diseases, fractures, and fresh pathology. All exhibits will be of such a nature that they will be of interest to the physician in general practice and to specialists.

The Committee on Scientific Exhibit of the Board of Trustees consists of Leonard W. Larson, M.D., Bismarck, N. D., Chairman; James R. McVay, M.D., Kansas City, Mo., and Julian P. Price, M.D., Florence, S. C. The Advisory Committee includes Harry J. Corper, M.D., Denver, James P. Leake, M.D., San Jose, Calif., Frederick P. Moersch, M.D., Rochester, Minn., Alton Ochsner, M.D., New Orleans, Howard F. Root, M.D., Boston, and Francis Scott Smyth, M.D., San Francisco. Applications for space at the San Francisco Meeting close on Jan. 18, but applications should be submitted as early as possible before that date. Application blanks may be obtained from the above committee members, from Section representatives, or from the Director, Scientific Exhibit, American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.

CONFERENCE OF A. M. A. AND FARM LEADERS

Rural health problems pertaining to doctor distribution, physicians' fees, the closing of small community hospitals because of financial difficulties, and, especially, voluntary prepayment plans were discussed Sept. 30 at a dinner sponsored by the A. M. A. Council on Rural Health. The meeting, held in Chicago, was attended by 45 persons, for the purpose of exchanging ideas in the hope of solving some of the many health problems that affect rural areas. Among those attending were members of the board of directors and of the staff of the American Farm Bureau Federation, the regional directors of the Associated Women of the American Farm Bureau Federation, members of the A. M. A. Council on Rural Health, Dr. F. J. L. Blasingame, representing the A. M. A. Board of Trustees, and Dr. Bert Howard, assistant secretary.

FOUNDER'S CUP PRESENTED TO A. M. A.

The A. M. A. has come into possession of a beautiful sterling silver cup presented 52 years ago to Dr. Nathan S. Davis, who, more than anyone else, may be credited with being the founder of the A. M. A. The cup, a token of the esteem of his medical colleagues in Chicago, has been given to the A. M. A. by two of his grandchildren, Dr. Nathan S. Davis III, Chicago, and Mrs. Ruth Boissevain, widow of Dr. Charles H. Boissevain.

Inscribed on one side of the cup is the legend: "Presented to Nathan Smith Davis, A.M., M.D., LL.D., in recognition of his long and distinguished service to medicine in its every field of usefulness by the members of that profession which he has so conspicuously adorned and to whose shield he has given an added lustre. October 5, 1901." On another side is the Latin inscription: "Palman Qui Meruit Ferat"—"Let him who has won it bear the palm"—and the citation: "Pioneer in local and national organization and in graded medical instruction." On a third side is an engraved portrait of Dr. Davis, who died in 1904 at the age of 87.

NEW ASSOCIATE SECRETARY OF COUNCIL

Dr. Walter S. Wiggins, who has been assistant dean for graduate and postgraduate medical education at the State University of New York, Syracuse, since 1951, will join the A. M. A. headquarters staff Jan. 1. He is taking over the position of Associate Secretary of the A. M. A. Council on Medical Education and Hospitals, replacing Dr. Francis R. Manlove, who recently became director of the medical center and dean of the department of medicine, University of Colorado School of Medicine, Denver. Dr. Wiggins was graduated from Jefferson Medical College, Philadelphia, in 1941.

TODAY'S HEALTH WINS AWARDS

Today's Health, a monthly magazine published by the A. M. A., recently won two awards in the annual magazine show of the American Institute of Graphic Arts in New York. Ninety-two layouts were selected from some 2,000 entries for awards and exhibition. This was the first time since 1951 that *Today's Health* had entered this show, the most important magazine show in this hemisphere. It also won two awards at that time. One of the winning layouts, designed by Artist Charles Turzak, was for the article "How to Read Science Stories." Written by Patricia Jenkins, assistant managing editor of *Today's Health*, the article was published in the May issue and is being reprinted in a handbook for college science teachers.

NEW A. M. A. PUBLICATIONS

Apparatus Accepted, 1953 edition, a publication of the A. M. A.'s Council on Physical Medicine and Rehabilitation, is now available. This booklet lists and describes briefly various devices that meet the Council's standards of acceptance. Also included in the booklet are the Council's rules for submitting products and the minimum requirements for certain devices. Copies may be obtained from the Council.

New Ways to Better PR.—A digest of proceedings of the Second Medical Public Relations Institute held Sept. 2-3, 1953, in Chicago.

NEW FILM IN MOTION PICTURE LIBRARY

"School Health in Action," a sound-and-color film produced for the Oklahoma State Department of Health with the cooperation of the Oklahoma State Medical Association, has been added to the A. M. A. motion picture library. This film is the story of Waytoka, a typical city in Oklahoma—how it recognized its school health problems and through community effort launched a movement for solving these problems. The service charge for this motion picture is $2.00.

MEDICAL NEWS

CONNECTICUT

Howe Award to Dr. Wilson.—The American School Health Association recently cited Dr. Charles C. Wilson, professor of education and public health at Yale University, New Haven, as a "distinguished contributor to the health of school children" and bestowed on him the William A. Howe award. Dr. Wilson, a former president of the American School Health Association, was editor of "Health Education," a report of a Joint Committee on Health Problems and Education set up by the National Education Association and the American Medical Association. He is the author of health texts for both elementary and secondary schools. Last spring he received the medal of the City of Paris for his contribution in the formation of the International Union for Health Education of the Public. He is president of the Connecticut Health League and former president of the Connecticut Tuberculosis Association. Dr. Wilson served as director of the department of health and physical education in the public school system of Evansville, Ind., from 1928 to 1934, and in the schools of Hartford from 1934 to 1941, when he was appointed professor of health and physical education at the Teachers College of Columbia University. He has been a member of the Yale faculty since 1946.

ILLINOIS

Trucking Industry Fellowships.—The Illinois Trucking Industry in observance of its 50th anniversary announces the establishment of two $5,000 fellowships for further study of mentally retarded children. The fellows will be chosen from graduates of medical schools in the midwest. Final selection will be made by a committee composed of Dr. Karl Meyer, chief of staff at Cook County Hospital, Chicago; Dr. John Bigler, head, department of pediatrics, Northwestern University Medical School; Dr. Samuel Hoffman, director of Hektoen Institute for Medical Research; Dr. Abraham Levinson, director, Dr. Julian D. Levinson Research Foundation at the institute; Ted Baker, president, Central Motor Freight Association of Chicago; and Walter Mullady, past president, American Trucking Association. The fund will pay each fellow $5,000 during the year-long training period and an additional $5,000 to cover other costs in connection with the study period. The work will be done under Dr. Levinson.

Chicago

Society News.—At the meeting of the Illinois chapter of the American College of Chest Physicians, Chicago, Dec. 11, Dr. John B. Schwedel, assistant clinical professor of medicine, Columbia University College of Physicians and Surgeons, New York, presented "Roentgenology of the Normal and the Abnormal Heart."——The Chicago Heart Association and the Society of Internal Medicine will hold a joint meeting Dec. 14, 8 p. m., at the Drake Hotel. The following program will be presented:

Isolation and Characterization of the Mammalian Striated Myofibrils, Arnold Brown and George M. Hass.
Pathological Changes in Congestive Heart Failure, Oglesby Paul, Gordon F. Vawter, Albert W. Schweitzer, Armin F. Schick, and George M. Hass.
Experimental Atherosclerosis (Recent Advances), Richard Jones.

Dr. Edith Potter Honored.—Dr. Edith L. Potter, associate professor of pathology at the University of Chicago, was awarded the honorary degree of doctora honoris causa by the University of Brazil at Rio de Janeiro, Oct. 1, at the dedication of the Instituto de Puericultura, the University's new hospital for children under 2 years of age. Dr. Potter was invited to set up the pathology laboratory of the institute when it was under construction in 1949. She received an award of achievement in 1951 from the University of Minnesota, Minneapolis, for research in the causes of infant death and the Rh factor and last year received the Elizabeth Blackwell award of the New York Infirmary. Author of "Pathology of the Fetus and the Newborn," Dr. Potter is a consultant to the Armed Forces Institute of Pathology, Washington, D. C., and the Chicago Health Department. She is a past president of the Chicago Pathological Society.

University News.—The University of Illinois College of Medicine announces that Drs. Louis Lams and Raymond E. Robertson have received nonsalaried appointments as clinical assistant professors of psychiatry and that Dr. M. Jeanne Spurlock will serve in the same capacity on four-fifths time. Dr. Lams will assist in the teaching program of residents and senior clerks. Dr. Robertson recently was appointed acting superintendent of the Institute for Juvenile Research, replacing Dr. Julius B. Richmond who resigned. Dr. Spurlock will work as a child psychiatrist on the children's psychosomatic ward and will assist in the teaching of medical students, residents, and ancillary personnel.——Dr. Frank J. Fara, professor of obstetrics, Cook County Graduate School of Medicine, has been appointed clinical assistant professor on the nonsalaried staff of the department of obstetrics and gynecology at the University of Illinois College of Medicine. Dr. Fara, who was associated with Northwestern University Medical School, is a member of the attending staff at Cook County Hospital, and head of the department of obstetrics and gynecology at the Hospital of St. Anthony de Padua.

KANSAS

University News.—Dr. Mahlon H. Delp, professor of medicine, was elected by the recently graduated senior class of the University of Kansas School of Medicine, Kansas City, as the faculty member who in their opinion had been most devoted to his primary objective as a teacher.

Awards to Seniors and Residents.—At the annual medical staff night of the department of medicine, University of Kansas School of Medicine, Kansas City, to honor visiting staff physicians, medical students, and residents the following awards were presented:

A clock with an engraved brass plaque inset to Dr. Jesse D. Rising as the visiting physician who had spent the greatest amount of time in the senior medicine outpatient clinic during the previous five months.
The Porter award of $300 to Lamont Gaston, graduating senior, Lawrence, for the best four year grade average in medical school.
The Marcell award of a medicine bag and $100 to graduating senior Dale Griswold, Newton, for the highest total grades on the junior and senior comprehensive written examinations in medicine.
The Marcell award of $100 to Floyd W. Baker, Leavenworth, the graduating senior making the greatest improvement between the junior and senior years in medicine.
The Guffey prize of $100 for the graduating senior doing the best work in the department of obstetrics and gynecology, to Donald N. Kuenzi, Helena, Mo.
The Guffey prize of $250 to K.U.M.C. resident or intern doing the best work in the department of obstetrics and gynecology, to Dr. William J. Spanos, St. Louis.
The Ginsburg award of $100 for the outstanding record in the sophomore physical diagnosis course, to Daniel Lester Azarnoff, Lawrence.

KENTUCKY

State Medical Election.—At the annual meeting of the Kentucky State Medical Association in Louisville, Dr. J. Duffy Hancock, Louisville, assumed the presidency, and Dr. Clyde C. Sparks, Ashland, was chosen president-elect.

Posthumous Award to Dr. Barr.—For the first time in Kentucky State Medical Association history, the distinguished service medal of the association was conferred on a deceased

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

member (Dr. R. Haynes Barr, Owensboro, who died May 5, while serving as president of the association). Dr. E. Bruce Underwood, Louisville, secretary, presented the award to Mrs. Barr at the annual dinner, Sept. 24.

MARYLAND

Dr. Follis Goes to Utah.—Dr. Richard H. Follis Jr., formerly associate professor of pathology at Johns Hopkins University School of Medicine, Baltimore, has been appointed professor and head of the department of pathology at the University of Utah College of Medicine, Salt Lake City. He will serve also as pathologist to the Salt Lake County General Hospital and as consultant in pathology to the Veterans Administration hospitals in Salt Lake City.

Symposium on Tuberculosis.—At the annual meeting of the Baltimore City Medical Society, Dec. 18, Dr. Ross L. McLean, Baltimore, will serve as moderator for a symposium on tuberculosis, with the following participants: Col. Carl W. Tempel (MC), chief, medical service, Fitzsimons Army Hospital, Denver; Dr. J. Maxwell Chamberlain, associate professor of surgery, Columbia University College of Physicians and Surgeons, New York; Mr. William Steenken Jr., Trudeau Laboratory, Trudeau, N. Y.; and Dr. Oscar Auerbach, chief, laboratory service, Veterans Administration Hospital, East Orange, N. J.

MINNESOTA

Dr. Krusen Honored.—Dr. Frank Hammond Krusen, head of the section on physical medicine, Mayo Clinic, Rochester, since 1935 and professor of medicine, Mayo Foundation, who recently received from Gov. C. Elmer Anderson the state's award of merit for his contributions to employment through rehabilitation of physically handicapped persons, has been named to receive the second annual physician's award by the President's Committee on Employment of the Physically Handicapped. Chairman of the A. M. A. Council on Physical Medicine and Rehabilitation, a past president of the American Congress of Physical Medicine, and councilor of the National Association for Crippled Children since 1947, Dr. Krusen serves on the advisory board of the Minnesota Rehabilitation Association and is the author of books and articles in the field of physical medicine. In 1944 he was chairman of the Baruch Committee on War and Post-War Physical Rehabilitation. The award will be presented during the annual meeting of the Congress on Industrial Health at Louisville, Feb. 23-24, 1954.

MONTANA

State Medical Election.—At the annual meeting of the Montana Medical Association in Billings, Dr. Sidney C. Pratt, Miles City, was elected president, Dr. John J. Malee, Anaconda, president-elect, Dr. George W. Setzer, Malta, vice-president, Dr. Theodore R. Vye, Billings, secretary-treasurer, Dr. Park W. Willis Jr., Hamilton, assistant secretary-treasurer, and Drs. James M. Flinn, Helena, and Francis L. McPhail, Great Falls, executive committee members.

Personal.—Dr. Maurice A. Shillington, a past president of the Montana Medical Association, has been elected to honorary membership in the association. Dr. Shillington recently retired from the active practice of medicine in Glendive and moved to Minnesota.——Dr. Stuart O. Olson, Glendive, was recently appointed a member of the state board of medical examiners and a member of the governor's committee on mental health to succeed Dr. Shillington, who resigned on retirement.——Dr. William F. Morrison, Missoula, has been appointed to the state board of health to succeed Dr. Edward S. Murphy, Missoula, who resigned.

Memorial Carillon.—Dr. William F. Cogswell, Helena, executive officer and secretary of the state board of health from 1912 to 1946, was honored in October at the dedication of the 47-bell memorial carillon in a tower on the campus of Montana State University, Missoula, when a carillon bell was dedicated in his name in recognition of 34 years of public health service to Montana. The Cogswell bell plaque at the base of the tower reads: "Presented by William O. Cogswell '23, Edward B. Cogswell, and Andrew C. Cogswell '27 in honor of their father, Dr. William F. Cogswell, pioneer in Montana public health and secretary of the State Board of Health 1912-1946."

NEW YORK

Warning Against Obsolete Refrigerators.—The state health department has issued a warning that a number of obsolete water-cooled gas refrigerators that had been condemned for use in New York City have been sold or transferred for installation in apartment houses located outside the city limits. About 50,000 of the water-cooled gas refrigerators in New York City have already been abandoned. In all, there were about 200,000 of the appliances in the city, all 25 or more years old. The department also warned that a considerable number of deaths occur each year throughout the country because of fumes from improperly adjusted gas burners operating in poorly ventilated rooms.

The 192 Million Dollar Hospital Program.—With the breaking of ground for the 552-bed Coney Island Municipal Hospital, all large projects of the 192 million dollar postwar program of the city department of hospitals will be either under construction or already operating. The latter group includes the 1,920-bed Bird S. Coler Memorial Hospital and Home on Welfare Island (20 million dollars); the Tuberculosis Hospital of the Kings County Hospital Center, a 716-bed unit (8 million dollars); the James Ewing Hospital, a 275-bed cancer unit affiliated with Memorial Center for Cancer and Allied Diseases (6 million dollars); and the Francis Delafield Hospital, a 307-bed cancer facility affiliated with Columbia-Presbyterian Medical Center (9 million dollars). Nearing completion and scheduled for opening within the next year are a 236-bed addition to Queens General Hospital, Jamaica (6 million dollars) and the 511-bed Nathan B. Van Etten Hospital, a tuberculosis unit of the new Bronx Municipal Hospital Center (approximately 15 million dollars). Under construction are the Abraham Jacobi Hospital, an 898-bed general care unit of the Bronx Municipal Hospital Center, which, with the auxiliary buildings of the center, will cost 23 million dollars; the 1,050-bed East Harlem General Hospital (replacement of the old Metropolitan Hospital on Welfare Island), which will cost 26 million dollars; the 961-bed Elmhurst General Hospital (replacement of the old New York City Hospital on Welfare Island), which will cost 26 million dollars; and the new Bellevue Nurses' Residence and School, which will accommodate 900 nurses and student nurses, and cost 15 million dollars. The remainder of the 192 million dollars is being spent on a program of modernization of existing facilities. The new Coney Island Municipal Hospital, a 10-story building, which will occupy a 10-acre site adjacent to the present hospital, will be a general hospital but will provide tuberculosis and contagious disease services. The present Coney Island, constructed in 1910, will be converted into a 279-bed facility to care for the chronically ill. When all construction is completed, the hospital will have a total capacity of 831 beds and a new outpatient department designed to accommodate more than 600 clinic patients daily. The 15 million dollar cost includes renovation of the present hospital. Among the speakers at the groundbreaking were Drs. John E. Hammett, president of the medical board of the hospital, and Louis Berger, president of the Medical Society of the County of Kings. Dr. Marcus D. Kogel, commissioner of hospitals, presided.

New York City

Tumor Clinic.—Dr. Herbert C. Maier, director of surgery, Lenox Hill Hospital, will present "Cancer of the Lung" at the tumor clinic conference at Harlem Hospital (Women's Pavilion, Main Floor, 137th St. Entrance), Dec. 16, 10:45 a. m.

Harvey Lecture.—Dr. Paul Klemperer, professor of pathology, Columbia University College of Physicians and Surgeons, will deliver the fourth Harvey lecture, "The Significance of the Intermediate Substances of the Connective Tissue in Human Disease," of the 1953-1954 series at the New York Academy of Medicine, Dec. 17.

Geriatric Clinic.—A clinic specializing in the ills of the aged was recently dedicated at Beth Israel Hospital, 17th St. near 1st Ave. The clinic is named after Mr. Charles H. Silver, now serving his sixth consecutive term as president of the hospital. Hon. Alben W. Barkley dedicated the six story granite and brick structure. Msgr. James J. Lynch, director of Catholic Charities, who represented Francis Cardinal Spellman, gave a $10,000 check from the Alfred E. Smith Memorial Foundation, and Mayor Impellitteri reviewed the history of Beth Israel since its establishment by a group of immigrants 63 years ago.

Dr. Jaffee Honored.—Dr. Henry L. Jaffe, director of laboratories, Hospital for Joint Diseases, who recently conducted clinicopathologic conferences on skeletal diseases, sponsored by the British Post-Graduate Medical Federation (University of London) and the Institute of Orthopaedics of London, was made an honorary member of the Royal Society of Medicine. He also delivered a Lord Moynihan lecture before the Royal College of Surgeons and conducted a clinicopathologic conference at the Royal National Orthopaedic Hospital, and at Oxford he lectured at the Nuffield Orthopaedic Center. His tour included Manchester, Liverpool, and Glasgow, where he conducted a clinicopathologic conference at the teaching hospitals connected with the medical schools. The tour terminated in Belfast, Ireland, where he held a slide seminar before the Pathologic Society of Great Britain and Ireland.

NORTH CAROLINA

Personal.—Dr. Calvin C. Applewhite, Raleigh, director of the State Board of Health's Division of Local Health Administration, was honored by the North Carolina Public Health Association at its annual meeting at Nags Head, when he received the Carl V. Reynolds award for distinguished service in the field of public health.

Society-University Project.—A new type of medical continuation education project was recently inaugurated through a cooperative program sponsored by the Rowan-Davie Counties Medical Society and the University of North Carolina School of Medicine, Chapel Hill. Under the plan a member of the staff of the medical school selected by the program committee of the society will visit the Rowan Memorial Hospital, Salisbury, once a month to participate in locally planned medical activities. He will take part in such activities as consultations, clinical conferences, rounds, and reviews of deaths and will give an informal discussion on some selected topic. This type of postgraduate program, related to the local problems and situation, involves extensive participation by local physicians.

OHIO

Dr. Goldblatt Returns to Cleveland.—Dr. Harry Goldblatt, who in 1946 left Cleveland to develop and direct the Institute for Medical Research at the Cedars of Lebanon Hospital, Los Angeles, has returned as director of laboratories at Mount Sinai Hospital. During the past seven years Dr. Goldblatt has conducted investigations into the humoral mechanisms of the production of high blood pressure, has continued the experimental studies of liver disease which were initiated some 15 years ago in Cleveland in cooperation with Dr. Paul Gyorgy, Philadelphia, and has furthered the studies on the experimental production of cancer, originally undertaken in 1930 at the Institute of Pathology of Western Reserve University School of Medicine, Cleveland. Dr. Goldblatt has been affiliated with the Lakeside Hospital, Cleveland, Lister Institute of Preventive Medicine, London, England, the University of Colorado School of Medicine, Denver, Western Reserve University School of Medicine, Cleveland, and the University of Southern California School of Medicine, Los Angeles. He is the recipient of the John Phillips award, the Alvarenga award, the annual scientific award of Phi Lambda Kappa, the Ward Burdick award, the New Orleans trophy by Zeta Beta Tau, the Charles Eiseman award, and the Charles Mickle fellowship award. During World War I he served as a lieutenant in the medical corps.

OKLAHOMA

Society News.—The Oklahoma Society of Psychiatrists and Neurologists has elected Dr. Alfred A. Hellams, Oklahoma City, president, Dr. Harry Wilkins, Oklahoma City, vice-president, Dr. Charles A. Smith, Oklahoma City, secretary-treasurer, and Dr. Neil B. Kimerer, Oklahoma City, member of the executive committee.

Mental Health Board.—Pursuant to repeal of the old mental health law and enactment of a new one providing for appointment of a board of mental health composed of two physicians, one attorney, and three lay persons, Gov. Johnston Murray has appointed Drs. Maude M. Masterson, Oklahoma City, and Joe E. Tyler, Tulsa, to represent the medical profession. The appointments were made from a list of names submitted by the council of the Oklahoma State Medical Association.

Fifty Year Club.—Dr. Charles E. Calhoun, Sand Springs, recently received a gold pin commemorating the completion of 50 years in the active practice of medicine. The presentation was made by Dr. John E. McDonald, Tulsa, president of the Oklahoma State Medical Association. Dr. Calhoun practiced at Shawnee for several years, in 1910 moved to Sand Springs, and during World War I served as an officer in the U. S. Army Medical Corps.——Lifetime membership and a service recognition plaque in recognition of more than 50 years of medical service were recently presented to Dr. John L. Lehew, Pawnee, in a ceremony attended by Dr. Lehew's three sons, Dr. Elton W. Lehew and Dr. John L. Lehew Jr., Guthrie, and Clifford H. Lehew, D.D.S., Pawnee.——The Tillman County Medical Association recently bestowed on Dr. George A. Comp, Manitou, a 50 year gold pin. Dr. Comp, who after graduation joined his father, a physician and surgeon in Edmond, Okla., came to Manitou in 1906. He was recently honored by Manitou citizens by being named the community's most useful citizen.

TENNESSEE

University News.—Dr. Elmer E. Pautler, formerly an instructor of pathology at the Bowman Gray School of Medicine, Winston-Salem, N. C., has joined the staff of the University of Tennessee Medical Units, Memphis, as assistant professor of pathology and bacteriology.——Dr. Conley Hall Sanford, who has been affiliated with the University of Tennessee College of Medicine, Memphis, since 1920, and since 1939 has been chief of its division of medicine and chief of staff of the John Gaston Hospital, has retired from these positions but will continue as professor of medicine and as a private practitioner. Dr. Sanford is a charter member of the local chapter of Alpha Omega Alpha and of the American Board of Internal Medicine.——Dr. Phillip C. Schreier has been appointed acting chief of the division of obstetrics and gynecology, University of Tennessee College of Medicine and the John Gaston Hospital, Memphis, to replace Dr. Frank E. Whitacre, who recently resigned to join the staff of Vanderbilt University College of Medicine, Nashville.

Craig-Brown Memorial Fund Perpetuated.—Classmates of Drs. William Riney Craig and Clyde Hulee Brown, who lost their lives in World War II, will be listed perpetually among the annual contributors to the living endowment of Vanderbilt University, Nashville. Dr. Craig, who died on a Japanese prison ship in January, 1945, was commissioned a medical officer in the regular U. S. Army on graduation, was chief of the surgical service at Sternberg General Hospital in Manila at the time of the Japanese attack, and was executive officer of a hospital on Bataan until captured and imprisoned at Cabanatuan, where he served as medical officer for his fellow prisoners for 2½ years. Dr. Brown, who was killed by an aerial bomb April 12, 1945, had practiced as a specialist in internal medicine in New York City from 1928 until 1941, when he was commissioned in the Naval Reserve. At the

time of his death he was the commander in charge of a mobile hospital unit attached to the Third Amphibious Corps, U. S. Marines, on Okinawa. The original purpose of the scholarship fund created by their classmates for the education of Dr. Craig's daughter and Dr. Brown's son having been fulfilled, the creators of the fund have changed its name to the William Riney Craig and Clyde Hulee Brown memorial fund, increased its amount in order to qualify as a permanent interest-paying fund in Vanderbilt's endowment, and directed that the annual income henceforth be credited to the living endowment.

VERMONT

Fifty Year Club.—The following physicians were recently elected to the 50 Year Club of the Vermont State Medical Society: Edwin A. Colton, Montpelier; Charles F. Dalton, Burlington; Albert C. Eastman, Woodstock; Fred A. Edmunds, Bethel; and Thomas J. Hagan, Springfield.

VIRGINIA

University News.—Dr. Edwin P. Lehman, chairman of the department of surgery and gynecology, has retired after 25 years as a faculty member of the University of Virginia School of Medicine, Charlottesville.

Personal.—Dr. Ralph G. Beachley, director of public health in Arlington County, was recently elected president of the Metropolitan-Washington Tuberculosis Conference, a group sponsored by the tuberculosis associations of the District of Columbia, Maryland, and Virginia.——Dr. Arnold F. Strauss, pathologist of De Paul Hospital, Norfolk, was honored during his recent visit to Peru by being made a corresponding member of the Peruvian Society for Pathology.

ALASKA

Heart Association Organized.—After the visit to Alaska this summer of Mr. Robert V. Titus, regional director of the American Heart Association, Inc., district chapters of the voluntary agency were organized in Fairbanks, Anchorage, Juneau, and Ketchikan. It is proposed that the executive committees of the four districts will serve as the territorial agency of the organization.

Accidents Chief Cause of Death.—Accidents were the chief cause of death in Alaska in 1952 for the second successive year. Accidents of all types accounted for 20.8%, or 262 of the 1,261 deaths in the territory last year, according to provisional data received by the Bureau of Vital Statistics. Heart diseases were in second place, causing 217 deaths, or 17.2%. Tuberculosis took the third highest toll of lives, causing 13.6%, or 172 of the total deaths. Though the 1952 data are still considered provisional, no change in the order of the final figures for the year is anticipated, according to the director of the Bureau of Vital Statistics, who said there are some known airplane accident deaths not yet officially reported which will later raise the total death by accident figure. Indication of a drop in the tuberculosis deaths in Alaska is attributed to the intensive tuberculosis control work during the past six years, in which cases were found earlier and more hospital beds were available.

GENERAL

National Society for the Prevention of Blindness.—This organization will hold its membership meeting Dec. 17, 4 p. m., in the Waldorf-Astoria Hotel, New York. The speaker will be Dr. Arnall Patz, research assistant in ophthalmology, Georgetown University School of Medicine, Washington, D. C., whose subject will be "Retrolental Fibroplasia." The society will hold its annual meeting in St. Louis, at the Hotel Jefferson, March 10-12, 1954.

Sedgwick Memorial Award.—At its annual meeting in New York the American Public Health Association presented its highest annual award, the Sedgwick memorial medal for distinguished service in public health to Carl E. Buck, Dr.P.H., professor of public health practice at the University of Michigan School of Public Health, Ann Arbor. Dr. Buck, a member of the Typhus Fever Commission to the Balkans in 1915 and 1916, served in the U. S. Army Air Service during World War I and later became a member of the staff of the International Health Board of the Rockefeller Foundation, doing malaria work in the southern states.

Trudeau Society Invites Papers.—The American Trudeau Society invites submission of papers for the 1954 annual meeting, Atlantic City, N. J., May 17-21. Abstracts in duplicate must be sent before Jan. 1, 1954, to Dr. Julius L. Wilson, chairman of the Medical Sessions Committee, Henry Phipps Institute, 7th and Lombard Sts., Philadelphia 47. Abstracts should be limited to a 300 word summary including important data and conclusions. Subjects for presentation may include all scientific aspects of tuberculosis and nontuberculous respiratory and cardiopulmonary disease as well as the results of investigative work bearing on these subjects.

Pediatric Residency Fellowships.—The American Academy of Pediatrics will grant 12 or more fellowships for pediatric residents for a period of six months to one year. These fellowships, created to enable young physicians in financial need to complete their pediatric training, carry a stipend of $500-$1,000. The fellowships, made possible by a grant to the academy from Mead Johnson & Company, will be granted as of July 1, 1954. Deadline for receipt of applications will be March 1. Further information may be had from Dr. James G. Hughes, Le Bonheur Children's Hospital, Adams and Dunlap, Memphis 5, or the American Academy of Pediatrics, 610 Church St., Evanston, Ill.

Dr. Mountin Memorial Volume.—A national committee is sponsoring the publication of a memorial volume of the writings of the late Dr. Joseph W. Mountin, "intended to reflect Dr. Mountin's diversity of interests, breadth of vision, and the pioneering nature of his work in many of the branches of public health work" and to serve "as a basic document for students and practitioners in public health." Dr. Leonard A. Scheele, Surgeon General, U. S. Public Health Service, is honorary chairman of the committee. Dr. Thomas Parran, Pittsburgh, and Dr. Joseph O. Dean, Washington, D. C., are co-chairmen, and C. Mayhew Derryberry, Ph.D., Washington, D. C., is serving as executive secretary. Information may be secured from and contributions sent to Joseph W. Mountin Memorial, P. O. Box 1610, Washington, D. C.

Libraries Association Translations Pool.—The Special Libraries Association, in cooperation with the John Crerar Library, Chicago, has created a new translations service in recognition of the increasing need for information regarding existing translations and for the availability of inexpensive copies. The association has deposited in the Crerar library, 1,300 translations which form the nucleus of the pool. Because the usefulness of the pool will be in direct proportion to the number of translations available, contributions of good copies of complete translations are solicited from government agencies, technical societies, universities, industries, and individuals. If copies are not available for deposit, they may be loaned to the Crerar library for a short time, with permission to microfilm or, alternatively, a 35 mm. microfilm may be deposited. Permission to lend or to reproduce in photocopy is a condition of deposit. Photoprint or microfilm copies of the translations listed may be obtained at the regular rates charged by the Crerar library. Currently, these rates are $1.40 for 10 pages or fraction thereof of photoprint, or 50 pages or fraction thereof of microfilm, plus a service charge of $1 for each translation (payable in advance). Discounts of 3.5-14% are allowed on advance purchase of photoduplication coupons. A price list will be sent on request.

Society News.—At the annual meeting of the **American Society of Anesthesiologists** in Seattle, Dr. Brant B. Sankey, Cleveland, was selected as president-elect, and Drs. Daniel C. Moore, Seattle, and Paul H. Lorhan, Kansas City, Kan., were elected as first and second vice-presidents. Dr. J. Earl

Remlinger Jr., Evanston, Ill., and Dr. Moses H. Krakow, New York, were reelected secretary and treasurer, respectively.—— The **American Academy of Ophthalmology and Otolaryngology** announces that, by special action of the council voted by mail, Dr. Walter H. Theobald, Chicago, president-elect, has been named to succeed the late Dr. John J. Shea, Memphis, who, elected at the 1952 annual meeting, died a few weeks later. Dr. Algernon B. Reese, New York, who was chosen president-elect of the academy at the annual meeting in Chicago, will assume the presidency in January, 1955. Other officers elected at the meeting include Drs. Francis H. Adler, Philadelphia, Theodore E. Walsh, St. Louis, and Dohrmann K. Pischel, San Francisco, vice-presidents, Dr. Lawrence R. Boies, Minneapolis, secretary for otolaryngology, Dr. Kenneth L. Roper, Chicago, secretary for ophthalmology, Dr. Albert D. Ruedemann, Detroit, secretary for instruction in ophthalmology, Dr. Dean M. Lierle, Iowa City, secretary for instruction in otolaryngology and maxillofacial surgery, Dr. Erling W. Hansen, secretary for public relations, and Dr. Daniel Snydacker, Chicago, secretary for home study courses.

FOREIGN

Meeting on Rheumatology.—The Rome Center of Rheumatology and the Italian Society of Rheumatology announce that the second Roman Rheumatological Days will be held in Rome, Feb. 13-14, 1954. Those wishing to submit reports must send the title of the paper no later than Dec. 31 to the Segreteria della Giornata, % Instituto di Semeiotica Medica, Universitá di Roma, and must submit a 10 line, typewritten abstract of the report no later than Jan. 15.

MEETINGS

AMERICAN MEDICAL ASSOCIATION: Dr. George F. Lull, 535 North Dearborn St., Chicago 10, Secretary.

1954 Annual Meeting, San Francisco, June 21-25.

1954 Clinical Meeting, Miami, Florida, Nov. 30-Dec. 3.

1955 Annual Meeting, Atlantic City, N. J., June 6-10.

1955 Clinical Meeting, Boston, Nov. 29-Dec. 2.

AMERICAN ACADEMY OF OBSTETRICS AND GYNECOLOGY, Netherland Plaza Hotel, Cincinnati, Dec. 14-16. Dr. C. Paul Hodgkinson, 116 South Michigan Blvd., Chicago 3, Secretary.

AMERICAN FEDERATION FOR CLINICAL RESEARCH:

EASTERN SECTION, Amphitheater, Children's Medical Center, Boston, Jan. 4. Dr. Walter Judson, Evans Memorial Hospital, Boston, Chairman.

SOUTHERN SECTION, Jung Hotel, New Orleans, Jan. 29. Dr. William Parson, University of Virginia School of Medicine, Charlottesville, Va., Chairman.

WESTERN SECTION, Auditorium, University of Oregon Medical School, Portland, Ore., Jan. 28. Dr. I. S. Edelman, University of California Medical Center, San Francisco Hospital, San Francisco 15, Secretary.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY:

EASTERN SECTION, Waldorf-Astoria, New York, Jan. 8. Dr. Francis W. Davison, Danville, Pa., Chairman.

MIDDLE SECTION, Park Plaza Hotel, St. Louis, Jan. 18. Dr. Ralph J. McQuiston, 20 North Meridian St., Indianapolis 4, Chairman.

SOUTHERN SECTION, Brown Hotel, Louisville, Ky., Jan. 16. Dr. Lester A. Brown, 490 Peachtree St., N.E., Atlanta 3, Ga., Chairman.

AMERICAN SOCIETY FOR SURGERY OF THE HAND, Palmer House, Chicago, Jan. 22. Dr. George V. Webster, 960 East Green St., Pasadena 1, Calif., Secretary.

NORTHWEST SOCIETY FOR CLINICAL RESEARCH, Portland, Ore., Jan. 28. Dr. Arthur L. Rogers, 1216 S.W. Yamhill St., Portland, Ore., Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA, Palmer House, Chicago, Dec. 13-18. Dr. Donald S. Childs, 713 East Genesee St., Syracuse 2, N. Y., Secretary.

REGIONAL MEETINGS, AMERICAN COLLEGE OF PHYSICIANS:

EASTERN PENNSYLVANIA, Philadelphia, Jan. 15. Dr. Thomas M. McMillan, 330 S. Ninth St., Philadelphia 7, Governor.

WESTERN SOCIETY FOR CLINICAL RESEARCH, Portland, Ore., Jan. 29-30. Dr. Herbert N. Hultgren, Stanford Hospital, San Francisco 15, Secretary.

FOREIGN

ASSOCIATION OF SURGEONS OF GREAT BRITAIN AND IRELAND, Leeds, England, May 13-15, 1954. Dr. Henry W. S. Wright, 45 Lincoln's Inn Fields, London W.C.2, England, Honorary Secretary.

BRITISH MEDICAL ASSOCIATION, Glasgow, Scotland, July 1-9, 1954. Dr. A. Macrae, B.M.A. House, Tavistock Square, London, W.C.1, England, Secretary.

CANADIAN MEDICAL ASSOCIATION, Vancouver, B. C., Canada, June 18-22, 1954. Dr. T. C. Routley, 135 St. Clair Ave. W., Toronto 5, Ont., Canada, General Secretary.

CONFERENCE OF INTERNATIONAL UNION AGAINST TUBERCULOSIS, Madrid, Spain, Sept. 26-Oct. 2, 1954. Secretariat, Escuela de Tisiologia, Ciudad Universitaria, Madrid, Spain.

CONGRESS OF INTERNATIONAL ASSOCIATION FOR THE PREVENTION OF BLINDNESS, New York, N. Y., U. S. A., Sept. 12-17, 1954. Professor Franceschetti, 2 Avenue Mirmot, Geneva, Switzerland, Secretary-General.

CONGRESS OF INTERNATIONAL SOCIETY OF SURGERY, Paris, France, May 21-22, 1954. Dr. L. Dejardin, 141, rue Belliard, Brussels, Belgium, General Secretary.

FRENCH MEDICAL CONGRESS OF FRENCH SPEAKING COUNTRIES IN THE CARIBBEAN, Port-au-Prince, Haiti, Dec. 15-21. For information write: Dr. Constant Pierre-Louis, School of Medicine, Port-au-Prince, Haiti.

HEALTH CONGRESS OF THE ROYAL SANITARY INSTITUTE, Scarborough, England, April 27-30. Mr. P. Arthur Wells, Royal Sanitary Institute, 90 Buckingham Palace Road, London, S.W.1, England, Secretary.

INTERNATIONAL CANCER CONGRESS, Sao Paulo, Brazil, July 23-29, 1954. Prof. A. Prudente, 171 rua Benjamin Constante, Sao Paulo, Brazil, President.

INTERNATIONAL CONFERENCE ON THROMBOSIS AND EMBOLISM, Basle, Switzerland, July 15-19, 1954. Dr. W. Merz, Chief Medical Officer, Gynecological Clinic, University of Basle, Basle, Switzerland, Hon. Secretary.

INTERNATIONAL CONGRESS ON CHILD PSYCHIATRY, University of Toronto, Toronto, Ontario, Canada, Aug. 13-14, 1954. Miss Helen Speyer, International Association for Child Psychiatry, 1790 Broadway, New York 19, New York, U. S. A., Executive Officer.

INTERNATIONAL CONGRESS OF CLINICAL PATHOLOGY, Washington, D. C., U. S. A., Sept. 6-10, 1954. Dr. Robert A Moore, Washington University School of Medicine, St. Louis 10, Missouri, U. S. A., Chairman, Committee on Arrangements.

INTERNATIONAL CONGRESS ON DISEASES OF THE CHEST, Barcelona, Spain, Oct. 4-8, 1954 Mr. Murray Kornfeld, 112 East Chestnut St., Chicago 11, Illinois, Executive Secretary.

INTERNATIONAL CONGRESS ON GROUP PSYCHOTHERAPY, Toronto, Ont., Canada, Aug. 12-14, 1954. Dr. J. L. Moreno, Room 327, 101 Park Ave., New York 17, N. Y., U. S. A., Director of Organizing Committee.

INTERNATIONAL CONGRESS OF HEMATOLOGY, Paris, Sept. 6-11, 1954. Dr. Jean Bernard, 86 rue d'Assas, Paris 6e, France, Secretary.

INTERNATIONAL CONGRESS OF THE HISTORY OF MEDICINE, Rome and Salerno, Italy, Sept. 13-20, 1954. For information write: Segreteria XIV Congresso Internazionale di Storia della Medicina, Instituto di Storia della Medicine, Citta Universitaria, Rome, Italy.

INTERNATIONAL CONGRESS OF HYDROCLIMATISM AND THALASSOTHERAPY, Dubrovnik, Yugoslavia, May 8-16, 1954. Prof. C. Plavsic, Zeleni venac 1, Belgrade, Yugoslavia, Secretary General.

INTERNATIONAL CONGRESS OF INDUSTRIAL MEDICINE, Naples, Italy, Sept. 13-19, 1954. Professor Scipione Caccuri, Director, Institute of Industrial Medicine Policlinico, Naples, Italy, Chairman, Organizing Committee.

INTERNATIONAL CONGRESS OF INTERNAL MEDICINE, Stockholm, Sweden, Sept. 15-18, 1954. Professor Anders Kristenson, Karolinska Sjukhuset, Stockholm 60, Sweden, Secretary-General.

INTERNATIONAL CONGRESS OF INTERNATIONAL COLLEGE OF SURGEONS, Sao Paulo, Brazil, April 26-May 2, 1954. Dr. Max Thorek, 1516 Lake Shore Drive, Chicago. Illinois, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, University of Toronto, Toronto, Ontario, Canada, Aug. 14-21, 1954. For information write: Executive Officer, International Congress on Mental Health, 111 St. George St., Toronto, Ontario, Canada.

INTERNATIONAL CONGRESS OF NUTRITION, Amsterdam, Netherlands, Sept. 14-18, 1954. For information write: Dr. M. van Eekelen, Centraal Instituut voor Voedingsonderzoek T.N.O., 61 Catharynesingel, Utrecht, Netherlands.

INTERNATIONAL CONGRESS ON OBSTETRICS AND GYNECOLOGY, Geneva, Switzerland, July 26-31, 1954. Dr H. de Watteville, Maternité Hôpital Cantonal, Geneva, Switzerland, President.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY, University of Montreal and McGill University, Montreal, Canada, Sept. 10-11, 1954, and Waldorf-Astoria, New York, N. Y., U. S. A., Sept. 12-17, 1954. Dr. William L. Benedict, 100 First Avenue Building, Rochester, Minnesota, U. S. A., Secretary-General.

INTERNATIONAL CONGRESS OF ORTHOPEDIC SURGERY AND TRAUMATOLOGY, Berne, Switzerland, Aug. 30-Sept. 3, 1954. For information write: Professor M. Dubois, Isle-Hospital, Berne, Switzerland.

INTERNATIONAL CONGRESS OF PSYCHOLOGY, Montreal, Canada, June 7-12, 1954. For information write: Prof. H. S. Langfeld, International Union of Scientific Psychology, Eno Hall, Princeton University, Princeton, N. J., U. S. A.

INTERNATIONAL CONGRESS FOR PSYCHOTHERAPY, Zurich, Switzerland, July 21-24, 1954. Dr. H. K. Fierz, Theaterstrasse 12, Zurich 1, Switzerland, Secretary General.

INTERNATIONAL GERONTOLOGICAL CONGRESS, London and Oxford, England, July 12-22, 1954. Prof. R. E. Tunbridge, General Infirmary, Department of Medicine, The University, Leeds, England, President.

INTERNATIONAL POLIOMYELITIS CONGRESS, Rome, Italy, Sept. 6-10, 1954. Mr. Stanley E. Henwood, 120 Broadway, New York 5, N. Y., U. S. A., Executive Secretary.

INTERNATIONAL SOCIETY OF BLOOD TRANSFUSION, Paris, France, Sept. 12-19, 1954. For information write: Colonel Julliard, Societe Internationale de Transfusion Sanguine, 53 Boulevard Diderot, Paris 12e, France.

INTERNATIONAL SOCIETY FOR CELL BIOLOGY, Leiden, Netherlands, Sept. 2-9, 1954. Professor Peter J. Gaillard, University of Leiden, Leiden, Netherlands, Secretary.

INTERNATIONAL SOCIETY OF GEOGRAPHICAL PATHOLOGY, Washington, D. C., U. S. A., Sept. 6-10, 1954. Professor Fred C. Roulet, Hebelstrasse 24, Basle, Switzerland, Secretary-General.

JOURNEES MEDICALES, Paris, France, April 21-25, 1954. For information write: Secretariat of the Journees, 12, rue Pierre-Geofroix, Colombes (Seine) France.

LATIN AMERICAN CONGRESS OF OTORHINOLARYNGOLOGY, Caracas, Venezuela, Feb. 21-25, 1954. Dr. Victorino Marquez Reveron, Centro, Medico, Caracas, Venezuela, Secretary-General.

LATIN AMERICAN CONGRESS OF PHYSICAL MEDICINE, Medellin, Columbia, South America, Feb. 15-20, 1954. Dr. Cassius Lopez de Victoria, 176 East 71st St., New York 21, N. Y., U. S. A., Executive Director.

PAN AMERICAN CONGRESS OF OTORHINOLARYNGOLOGY AND BRONCHOESOPHAGOLOGY, Mexico, D.F., Mexico, Feb. 28-March 4, 1954. Dr. Pedro Hernandez Gonzalo, 8 No. 358, Vedado, Havana, Cuba, General Secretary.

PAN AMERICAN MEDICAL ASSOCIATION, International Medical Cruise Congress, S. S. Nieuw Amsterdam, Jan. 6-22, 1954. Dr. Joseph J. Eller, 745 Fifth Avenue, New York 22, N. Y., U. S. A., Executive Director.

PAN-PACIFIC SURGICAL CONGRESS, Honolulu, Hawaii, Oct. 7-18, 1954. Dr. F. J. Pinkerton, Suite 7, Young Bldg., Honolulu 13, Hawaii, Director General.

SECTIONAL MEETING, AMERICAN COLLEGE OF SURGEONS, London, England, May 17-19, 1954. Dr. Michael L. Mason, 40 East Erie St., Chicago 11, Ill., U. S. A., Secretary.

SOUTH AMERICAN CONGRESS OF ANGIOLOGY, Sao Paulo, Brazil, July 1954. For information write: Dr. Rubens Carlos Mayall, Rua Senador Vergueiro 73, Rio de Janeiro, Brazil, S. A.

WORLD CONGRESS OF CARDIOLOGY, Washington, D. C., and Bethesda, Md., U. S. A., Sept. 12-17, 1954. Dr. L. W. Gorham, 44 East 23d St., New York 10, N. Y., U. S. A., Secretary-General.

WORLD CONGRESS OF INTERNATIONAL SOCIETY FOR THE WELFARE OF CRIPPLES, The Hague, Netherlands, Sept. 13-17, 1954. For information write: D. C. Schaap, Centrale Vereniging, Apeldoorschweg 51, Arnhem, Netherlands.

WORLD FEDERATION OF OCCUPATIONAL THERAPISTS, Edinburgh, Scotland, August 17, 1954.

WORLD MEDICAL ASSOCIATION, Rome, Italy, Sept. 26-Oct. 2, 1954. Dr. Louis H. Bauer, 345 East 46th St., New York 17, N. Y., U. S. A., Secretary-General.

EXAMINATIONS AND LICENSURE

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, June 22-24, 1954. Sec., Dr. D. G. Gill, 537 Dexter Ave., Montgomery.

COLORADO:* *Examination.* Denver, Dec. 15-16. Final date for filing application was Nov. 14. *Endorsement.* Denver, Jan. 12. Final date for filing application is Dec. 12. Executive Secretary, Miss Beulah H. Hudgens, 831 Republic Bldg., Denver 2.

DELAWARE: Dover, Jan. 12-14, 1954. Sec., Dr. Joseph S. McDaniel, 229 South State St., Dover.

DISTRICT OF COLUMBIA:* *Reciprocity.* Washington, Dec. 14. Sec., Dr. Daniel L. Seckinger, 1740 Massachusetts Ave., N.W., Washington.

GUAM: The Commission on Licensure will meet whenever a candidate appears or submits his credentials. Director of Medical Services, Guam Memorial Hospital, Agana.

HAWAII: Honolulu, Jan. 11-14. *Examination.* Sec., Dr. I. L. Tilden, 1020 Kapiolani St., Honolulu.

IDAHO: Boise, Jan. 11-13, 1954. Executive Secretary, Mr. Armand L. Bird, 364 Sonna Bldg., Boise.

ILLINOIS: *Examination and Reciprocity.* Chicago, Jan. 26-28. Supt. of Registration, Mr. Fredric B. Selcke, Capitol Bldg., Springfield.

INDIANA: *Examination.* Indianapolis, June 16-18. Exec. Sec., Miss Ruth V. Kirk, 538 K of P Bldg., Indianapolis.

MASSACHUSETTS: *Examination.* Boston, Jan. 12-15. Sec., Dr. Robert C. Cochrane, Room 37, State House, Boston 33.

MICHIGAN:* *Examination.* Detroit and Ann Arbor, June 1954. Sec., Dr. J. Earl McIntyre, 202-4 Hollister Bldg., Lansing 8.

MISSISSIPPI: *Reciprocity.* Jackson, December. Assistant Secretary, Dr. R. Whitfield, Old Capitol, Jackson 113.

MONTANA: *Reciprocity.* Helena, April 5. *Examination.* Helena, April 6-7. Sec., Dr. S. A. Cooney, 214 Power Block, Helena.

NEBRASKA:* *Examination.* Omaha, June 1954. Director, Mr. Husted K. Watson, 1009 State Capitol Bldg., Lincoln.

NEVADA:* *Examination and Reciprocity.* Reno, Jan. 6. Sec., Dr. George H. Ross, 112 Curry St., Carson City.

NEW HAMPSHIRE: *Examination and Reciprocity.* Concord, March 10. Sec., Dr. John S. Wheeler, 107 State House, Concord.

NEW MEXICO:* *Examination and Reciprocity.* Santa Fe, April 12-13. Sec., Dr. R. C. Derbyshire, 227 E. Palace Ave., Santa Fe.

NEW YORK: *Examination.* Albany, Buffalo, Syracuse and New York City, Feb. 16-19. Sec., Dr. Stiles D. Ezell, 23 S. Pearl St., Albany.

NORTH CAROLINA: *Reciprocity.* Winston-Salem, Jan. 18. Sec., Dr. Joseph J. Combs, 716 Professional Bldg., Raleigh.

NORTH DAKOTA: *Examination.* Grand Forks, Jan. 6-9, 1954. *Reciprocity.* Grand Forks, Jan. 9. Sec., Dr. C. J. Glaspel, Grafton.

OHIO: *Examination.* Columbus, Dec. 17-19. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus 15.

OKLAHOMA:* *Examination.* Oklahoma City, June 9-10. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON:* *Examination.* Portland, Jan. 4-5. *Reciprocity.* Portland, Jan. 14-16. Sec., Mr. Howard I. Bobbitt, 609 Failing Bldg., Portland.

PENNSYLVANIA: *Examination.* Philadelphia, January 1954. Acting Secretary, Mrs. Margaret G. Steiner, Box 911, Harrisburg.

RHODE ISLAND:* *Examination.* Providence, Jan. 7-8. Admin. of Professional Regulation, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA:* *Examination.* Sioux Falls, Jan. 19-20, 1954. Reciprocity can be obtained at any time between meetings of board. Executive Secretary, Mr. John C. Foster, 300 First National Bank Bldg., Sioux Falls.

TENNESSEE:* *Examination.* Memphis, Dec. 16-17. Sec., Dr. H. W. Qualls, 1635 Exchange Bldg., Memphis.

VERMONT: *Examination.* Burlington, Feb. 1954. Sec., Dr. F. J. Lawliss, Richford.

WASHINGTON:* *Examination.* Seattle, Jan. 10-13. *Reciprocity.* Seattle, Jan. 10. Sec., Mr. Edward C. Dohm, Department of Licenses, Olympia.

WEST VIRGINIA: *Examination and Reciprocity.* Charleston, Jan. 11-13. Sec., Dr. N. H. Dyer, State Office Bldg., Charleston 5.

WISCONSIN:* *Examination and Reciprocity.* Madison, Jan. 12-14, 1954. Sec., Dr. A. G. Koehler, 46 Washington Blvd., Oshkosh.

WYOMING: *Oral Examination and Reciprocity.* Cheyenne, Feb. 1. Sec., Dr. Franklin D. Yoder, State Office Bldg., Cheyenne.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ALASKA: On application. Juneau or other towns in Territory as decided by Board. *Reciprocity.* On application. Sec., Dr. C. Earl Albrecht, Box 1931, Juneau.

ARIZONA: *Examination.* Tucson, Dec. 15. Sec., Mr. H. D. Rhodes, University of Arizona, Tucson.

CONNECTICUT: *Examination.* New Haven, Feb. 13. Address: State Board of Healing Arts, 52 Whitney Ave., New Haven 10.

IOWA: *Examination.* Des Moines, Jan. 12. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Detroit and Ann Arbor, Feb. 12-13. Sec., Mrs. Anne Baker, 410 W. Allegan St., Lansing 15.

MINNESOTA: *Examination.* Minneapolis, Jan. 5-6. Sec., Dr. Raymond N. Bieter, 105 Millard Hall, Minneapolis 14.

NEVADA: *Examination.* Reno, Jan. 5. Sec., Dr. Donald G. Cooney, Box 9005, University of Nevada, Reno.

NEW MEXICO: *Examination.* Santa Fe, Jan. 17. Sec., Miss Marguerite K. Cantrell, Box 1522, Santa Fe.

OKLAHOMA: *Examination.* Oklahoma City, April 16-17. Sec., Dr. Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, March 6, June 5, Sept. 11 and Dec. 4. Sec., Mr. Charles D. Byrne, State Board of Higher Education, Eugene.

TENNESSEE: *Examination.* Memphis, Dec. 30-31. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis 3.

TEXAS: *Examination.* April 1954. Location determined by number of applicants from different sections of the state. Sec., Brother Raphael Wilson, C.S.C., 407 Perry-Brooke Bldg., Austin.

WASHINGTON: *Examination.* Seattle, Jan. 6-7. Sec., Mr. Edward C. Dohm, Department of Licenses, Olympia.

WISCONSIN: *Examination.* Madison, April 3. Final date for filing application is March 26. Sec., Dr. W. H. Barber, 621 Ransom St., Ripon.

*Basic Science Certificate required.

DEATHS

Dillehunt, Richard Benjamin ⊕ Portland, Ore.; born in Decatur, Ill., July 12, 1886; Rush Medical College, Chicago, 1910; dean emeritus at the University of Oregon Medical School, where he was professor of anatomy and assistant dean from 1912 to 1917, dean from 1920 to 1943, and also clinical professor of orthopedic surgery and head of the department; the faculty of the University of Oregon Medical School gave a dinner July 10, 1941, honoring him on his 30th anniversary as a member of the school, and on this occasion a portrait of him was unveiled; specialist certified by the American Board of Orthopaedic Surgery; served as orthopedic surgeon to Base Hospital No. 46 of the American Expeditionary Forces during World War I; honorary member of the Oregon State Medical Society; member of the American Orthopaedic Association, Pacific Coast Surgical Association of which he was president, 1939-1940, North Pacific Surgical Association, and the American Academy of Orthopaedic Surgeons; fellow of the American College of Surgeons; first surgeon-in-chief of the Shriners' Hospital for Crippled Children, which he helped to establish; chief of staff of the Portland Free Dispensary, the forerunner of the present Outpatient Clinic; chief of orthopedic service for Doernbecher Memorial Hospital for Children; consulting orthopedic surgeon to Veterans Administration Hospital and to the State Industrial Accident Commission; affiliated with Multnomah and Emanuel hospitals; in 1935 was named by President Roosevelt as a member of the advisory committee of orthopedic surgeons to Georgia Warm Springs Foundation; on Jan. 6, 1938, was designated Portland's "First Citizen of 1937" by the Portland Realty Board; died Oct. 31, aged 67, of coronary thrombosis.

Stinson, William David ⊕ Memphis, Tenn.; born in Salem, Ill., April 15, 1894; University of Michigan Medical School, Ann Arbor, 1920; associate professor of otology, laryngology, and rhinology at University of Tennessee College of Medicine; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological, Rhinological and Otological Society; in 1951 president of the Memphis and Shelby County Medical Society; for many years secretary of the Tennessee Academy of Ophthalmology and Otolaryngology; served as chief and president of the staff of Baptist Memorial Hospital; died in Nashville Oct. 18, aged 59, of arteriosclerotic heart disease.

Fouche, James Sample ⊕ Columbia, S. C.; born in Ninety-Six, S. C., March 20, 1886; Medical College of the State of South Carolina, Charleston, 1912; also a graduate in pharmacy; past president of the Columbia Medical Society and the Alumni Association of the Medical College of South Carolina; served during World War I; from 1920 to 1932 special chest examiner for the U. S. Veterans Bureau regional office in Columbia and from 1928 to 1932 was the chief medical officer; for many years chief of the outpatient service, Veterans Administration; on the staffs of the Columbia, Baptist, and Providence hospitals; died Oct. 11, aged 67, of aneurysm of the abdominal aorta.

Lobsenz, Herbert ⊕ Hopewell Junction, N. Y.; born in Paterson, N. J., Jan. 23, 1920; New York University College of Medicine, New York, 1943; specialist certified by the American Board of Radiology; certified by the National Board of Medical Examiners; served during World War II and was awarded the Bronze Star, the Unit Presidential Citation, the Combat Medical Badge, and other decorations; affiliated with the Veterans Administration Hospital in Castle Point; associate radiologist at St. Francis Hospital in Poughkeepsie; formerly affiliated with the Maimonides Hospital in Brooklyn; died Oct. 18, aged 33, of Hodgkin's disease.

⊕ Indicates Member of the American Medical Association.

Atkinson, Howell, North Little Rock, Ark.; Kansas City (Mo.) College of Medicine and Surgery, 1918; on the courtesy staff of St. Vincent's Infirmary in Little Rock; died Oct. 19, aged 69, of coronary occlusion.

Barnett, Thomas Meriwether, Atlanta, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; served during World War I; retired chief surgeon of the old U. S. Veterans Hospital No. 48; died Sept. 27, aged 74, of coronary occlusion and arteriosclerosis.

Bartecchi, Ferdinand Aloysius ⊕ Scranton, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1920; director of public health; formerly county coroner; died Oct. 23, aged 56, of coronary thrombosis.

Donovan, William Henry ⊕ Iowa City, Iowa; State University of Iowa College of Medicine, Iowa City, 1907; died in the Mercy Hospital Sept. 1, aged 69, of Staphylococcus aureus bacteremia.

Fecteau, Adelard, St. Petersburg, Fla.; School of Medicine and Surgery of Montreal, Faculty of Medicine of the University of Laval at Montreal, Canada, 1895; served as city physician and as a member of the city board of health; on the staff of the Fall River General Hospital; died Oct. 14, aged 82, of aplastic anemia and arteriosclerotic heart disease.

Fergusson, Frederick William ⊕ Lodi, Calif.; Northwestern University Medical School, Chicago, 1918; past president and vice-president of the North Dakota State Medical Association; served as a member of the state board of medical examiners of North Dakota; died Sept. 5, aged 61.

Foley, Francis Edward, New Haven, Conn.; Yale University School of Medicine, New Haven, 1914; for many years physician for the State Athletic Commission; formerly on the staff of the Hospital of St. Raphael; died in North Westport, Mass., Oct. 15, aged 68.

Freas, Martin Wesley ⊕ Berwick, Pa.; Jefferson Medical College of Philadelphia, 1914; past president and vice-president of the Columbia County Medical Society; served during World War I; affiliated with Berwick Hospital; died Oct. 11, aged 64, of a cerebral accident.

Freeland, Frank, Maywood, N. J.; University and Bellevue Hospital Medical College, New York, 1901; died in Hackensack (N. J.) Hospital Oct. 22, aged 77, of acute left ventricular failure.

Fruth, Harold Edgar, Columbus, Ohio; Chicago College of Medicine and Surgery, 1915; served in France during World War I; physician for the Pennsylvania Railroad; died in Fostoria Oct. 13, aged 60.

Girouard, Joseph Arthur ⊕ Willimantic, Conn.; Baltimore Medical College, 1899; member of the New England Obstetrical and Gynecological Society; fellow of the American College of Surgeons; on the staff of the Windham Community Memorial Hospital; died Sept. 29, aged 78, of coronary thrombosis.

Gobar, Franklin Harold ⊕ Fullerton, Calif.; Stanford University School of Medicine, San Francisco, 1924; served during World War I; past president of the Orange County Medical Society; died Oct. 16, aged 63.

Good, Charles Frederick ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1927; specialist certified by the American Board of Pediatrics; served during World War II; medical supervisor of public schools in Cleveland; affiliated with the Babies and Childrens Hospital; died Oct. 16, aged 52, of arteriosclerotic heart disease.

Gordon, Donald Louis, Oscoda, Mich.; McGill University Faculty of Medicine, Montreal, Canada, 1939; served during World War II; died in the Hackensack (N. J.) Hospital Sept. 2, aged 44, of massive intestinal hemorrhage and thrombosis with embolism to lung.

Grillo, Vincent James ✠ New Haven, Conn.; Yale University School of Medicine, New Haven, 1933; specialist certified by the American Board of Orthopaedic Surgery; certified by the National Board of Medical Examiners; affiliated with Newington (Conn.) Home and Hospital for Crippled Children, Grace New Haven Community Hospital, and Hospital of St. Raphael; died recently, aged 44.

Hall, Fred Watt, Rome, Ga.; College of Physicians and Surgeons, Memphis, Tenn., 1907; consulting surgeon, Central of Georgia Railroad; died Oct. 2, aged 72, of myocardial infarction and arteriosclerosis.

Hansen, Charles Ola, Long Beach, Calif.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1898; served during World War I; died Oct. 8, aged 86, of arteriosclerotic heart disease.

Harris, George Gano ✠ Helena, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1917; served during World War I; twice president of the Alfalfa County Medical Society; affiliated with Masonic Hospital in Cherokee and the Enid (Okla.) General Hospital; died in Enid Sept. 30, aged 66, of coronary occlusion.

Hatchett, William Clifton, Hollywood, Fla.; Memphis (Tenn.) Hospital Medical College, 1912; for many years county health officer; served during World Wars I and II; died Oct. 26, aged 65, of a heart attack.

Hawley, Nelson Joy, Webster Groves, Mo.; Washington University School of Medicine, St. Louis, 1895; served during World War I; died in the Veterans Administration Hospital in Jefferson Barracks Oct. 1, aged 81, of arteriosclerosis.

Henritzy, Oscar Edwin, Port Matilda, Pa.; Medico-Chirurgical College of Philadelphia, 1898; also a graduate pharmacist; died in Altoona (Pa.) Hospital Sept. 30, aged 81.

Hood, Charles Sumner ✠ Ferndale, Wash.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1902; an Associate Fellow of the American Medical Association; formerly affiliated with the Indian Service; served during World War I; county coroner; on the staff of St. Joseph's Hospital in Bellingham; died in the Virginia Mason Hospital in Seattle Sept. 15, aged 79, of cerebral hemorrhage.

Houck, William Seibert, Harrisburg, Pa.; Medico-Chirurgical College of Philadelphia, 1914; also a minister; affiliated with Keystone Hospital; died Oct. 5, aged 67, of a heart attack.

Ivec, Martin J. ✠ Joliet, Ill.; Rush Medical College, Chicago, 1904; died in September, aged 74.

Jackson, Bruce Emmett ✠ Chicago; Chicago Medical School, 1927; served during World War II; died Oct. 21, aged 52, of coronary occlusion.

Jennings, Edward S. ✠ Spokane, Wash.; Milwaukee Medical College, 1909; an Associate Fellow of the American Medical Association; member of the North Pacific Surgical Association; died in the Sacred Heart Hospital Oct. 8, aged 72.

Jermstad, Robert James ✠ Flint, Mich.; Rush Medical College, Chicago, 1934; specialist certified by the American Board of Pathology; member of the College of American Pathologists and the American Society of Clinical Pathologists; served during World War II; affiliated with McLaren, Hurley, and St. Joseph hospitals; died in the Leila Y. Post Montgomery Hospital in Battle Creek Oct. 15, aged 45, of injuries received in an automobile accident.

Jerrick, Walter Fitzgerald ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1919; died in the Hospital of the University of Pennsylvania Oct. 23, aged 59, of hypertensive arteriosclerotic heart disease with renal failure.

Jobes, John Bell, Washington, Pa.; Eclectic Medical Institute, Cincinnati, 1896; died in St. Francis Hospital, Pittsburgh, Aug. 30, aged 84.

Jones, Frank Collett, Frankfort, Ind.; Chicago Medical College, 1889; died in the Clinton County Hospital Oct. 17, aged 90, of carcinoma of the sigmoid.

Jones, Maurice Leland ✠ Kansas City, Mo.; Rush Medical College, Chicago, 1930; specialist certified by the American Board of Pathology; member of the College of American Pathologists and the American Society of Clinical Pathologists; at one time on the faculty of the University of Tennessee College of Medicine, Memphis; affiliated with Veterans Administration Center in Wadsworth, Kan.; died in St. Luke's Hospital July 20, aged 52, of uremia following surgery.

Jost, William Edward ✠ St. Louis; St. Louis College of Physicians and Surgeons, 1906; died in the Alexian Brothers Hospital Sept. 18, aged 73.

Kauffman, Ira Dwight, Long Beach, Calif.; Chicago Homeopathic Medical College, 1901; died Aug. 23, aged 78, of carcinoma of the colon and liver.

Kownacki, Francis Joseph ✠ Philadelphia; Temple University School of Medicine, Philadelphia, 1919; affiliated with Frankford Hospital, Episcopal Hospital, and St. Mary's Hospital, where he died Oct. 21, aged 58, of coronary occlusion.

Lang, John Henry ✠ Fullerton, Calif.; St. Louis University School of Medicine, 1906; member of the Industrial Medical Association; died Aug. 1, aged 71, of coronary thrombosis, diabetes mellitus, and of an injury received in a fall.

Lipkis, Abram, Los Angeles; Denver and Gross College of Medicine, 1907; died Aug. 18, aged 78, of acute myocardial infarction, hypertension, and arteriosclerotic heart disease.

Little, Theodore Alvin ✠ Erie, Pa.; Baltimore Medical College, 1908; served during World War I; for many years physician at the General Electric Company; died Aug. 16, aged 71, of carcinoma of the prostate.

Lueke, Alexander William, Cleveland; University of Wooster Medical Department, Cleveland, 1897; director of the National Screw & Manufacturing Company and the Cleveland Graphite Bronze Division of the Clevite Corporation; died in the Huron Road Hospital Oct. 12, aged 79, of rupture of the heart.

Lurie, Solomon I. ✠ Newark, N. J.; The General Medical College, Chicago, 1923; an examining physician for Newark draft boards during World War II; on the staff of Beth Israel Hospital; died in Long Beach, L. I., Sept. 7, aged 57.

McLain, William Hay ✠ Wheeling, W. Va.; Rush Medical College, Chicago, 1896; died in St. Francis Hospital, Pittsburgh, Aug. 14, aged 79, of arteriosclerosis.

Miller, Edward Bernard, Stevens Point, Wis.; Chicago Medical School, 1935; served during World Wars I and II; died in St. Michael's Hospital, Oct. 1, aged 59, of hemiplegia, arteriosclerosis, and hypertension.

Robinson, Jay Aaron ✠ Trenton, N. J.; Georgetown University School of Medicine, Washington, D. C., 1942; certified by the National Board of Medical Examiners; deputy coroner of Mercer County; served during World War II; affiliated with St. Francis Hospital; died in the George Washington Hospital, Washington, D. C., Oct. 20, aged 37, of acute poliomyelitis.

Russell, James Andrew Merle ✠ Erie, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1917; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; past president of the Erie County Medical Society; served on the staffs of the Hamot and St. Vincent's hospitals; died Aug. 18, aged 61, of coronary thrombosis.

Strauss, Fletcher Louis ✠ Chicago; Rush Medical College, Chicago, 1897; an Associate Fellow of the American Medical Association; died in the Sherman Hospital, Elgin, Ill., Oct. 20, aged 77, of carcinoma of the stomach.

Sullivan, Walter Thomas Jr. ✠ Bronxville, N. Y.; Cornell University Medical College, New York, 1940; interned at Albany (N. Y.) Hospital; affiliated with the Lawrence Hospital, where he died Oct. 29, aged 43, of coronary occlusion.

Trombley, Bryan ✠ Detroit; Detroit College of Medicine and Surgery, 1921; on the staff of the Evangelical Deaconess Hospital; died in Santa Barbara, Calif., Sept. 15, aged 57, of coronary thrombosis.

FOREIGN LETTERS

BRAZIL

Duodenum-Lung Circulation Time in Portal Hypertension.—At a meeting of the Associação Paulista de Medicina, Drs. N. Moraes Barros, Octavio M. Dantas, and Palmiro Rocha presented a paper describing a study of the duodenum-lung circulation time in 38 patients (12 normal persons, 5 with diseases that do not interfere with the portal system, and 21 with a disease affecting the portal system). Although they found a striking difference between the circulation time in normal persons and in those with portal hypertension, there was an overlapping of the two groups between the values 30 and 40 seconds, suggesting an absence of hypertension when the time is less than 30 seconds and the presence of hypertension when the value is greater than 40 seconds. There was no significant difference between the duodenum-lung circulation time before and after an operation for a condition not involving the portal system, thus permitting the use of this determination as a test of the circulatory condition of the portal system. Quite different results were obtained in the patients on whom operations were performed that involved the portal system; of these 13 had splenorenal anastomosis, 3 had splenectomy, and 5 had ligation of the hepatic and splenic arteries. In all these patients, the duodenum-lung circulation time was lower after than before the operation. The duodenum-lung circulation time is not convenient for the study of the permeability of the venous shunt, nonsignificant differences having been found in patients on whom other types of operations were performed.

Postpartum Necrosis of the Anterior Hypophysis.—At a meeting of the Associação Paulista de Medicina, Drs. Cassio Bottura, Moacyr T. Verissimo, and Renato H. Migliorini presented a report on four cases of panhypopituitarism resulting from postpartum ischemic necrosis of the anterior hypophysis. A history of hemorrhage during the previous delivery and the subsequent clinical findings did not leave any doubt about the diagnosis. Owing to the psychic condition of such patients, the obstetric history is often inconclusive. The clinical findings are a combination of the signs and symptoms of gonadal, thyroid, and suprarenal insufficiencies. In making their diagnoses, the authors used the basal metabolic rate and the serum cholesterol level to assay the thyroid function; the Robinson-Power-Kepler test, the response of the eosinophils to corticotropin (ACTH) and epinephrine (Suprarenin), the tolerance to glucose and insulin, the blood sodium, potassium, and chloride levels, and the determination of the urinary 17-ketosteroids and corticoids to determine the suprarenal insufficiency; the colpocytology to ascertain the gonadal insufficiency in women; and the low urinary elimination of the gonadotropins to disclose the hypofunction secondary to a hypophyseal lesion. The absence of visual defects or roentgenographic alterations in the sella turcica ruled out the possibility of a tumor causing the hypophyseal lesion. These procedures, permitting the determination of the glandular insufficiency, even in the absence of pathognomonic clinical findings, enable the practitioner to make a surer diagnosis of the disease and prevent confusion with similar clinical entities, particularly with anorexia nervosa. The four patients described by the authors were in relatively good general condition with about normal body weight. This fact supports the belief that cachexia is not an essential symptom of panhypopituitarism.

Intermediate Nephron Nephrosis in Crotalic Poisoning.—The problem of the lesions caused by rattlesnake venom in man has been incompletely studied up to now. Drs. M. Freitas Amorim and R. Franco de Mello of the São Paulo Butantan Institute studied three fatal cases and found chiefly degenerative and necrotic phenomena, especially on the ascending part of the Henle loops and the distal convoluted tubules, with casts that gave positive hemoglobin reaction. The casts were also numerous in the medullar zone, in the interior of the ducts of Bellini. In two of the patients, there was, in the intermediate zone of the kidney and the cortex around the more degenerated tubules, an inflammatory and interstitial neutrophilic granulocytic reaction, with edema and some marked focal hyperplasia of histiocytes. In the medullary zone, however, the ducts of Bellini contained only casts, without any degeneration or necrosis and, consequently, without any inflammatory reaction in that region. This gives the medullary zone the appearance of a "clearing," in contrast to the intermediate and cortical zones of the parenchyma that present a less clear pattern because reactionary inflammatory lesions are present.

Such lesions may closely resemble those first described by Hackradt and by Minami under the name of burial nephrosis, by Bywaters and Dible as a crush syndrome, and later by Lucke as lower nephron nephrosis. These are characterized, in general, by myohemoglubinuria or simple hemoglobinuria or by hemolytic anemia, such as found in metallic poisonings, toxemia of pregnancy, falciparum malaria, and transfusion of incompatible blood. Lesions of this type, however, have never been described in patients with snake bite. The authors object to the designation of this condition as lower nephron nephrosis. They prefer to regard it as an intermediate nephron nephrosis. They stress the necessity of reserving the term lower nephron nephrosis for those patients in whom degenerative and necrotic lesions in the medullary zone of the kidney predominate, as in the renal lesions associated with gout.

Ovarian Cysts with Twisted Pedicles.—Ovarian cysts with long pedicles, even those of large volume, produce clinical symptoms only when there are complications in their evolution. Among these complications the most frequent is torsion of the pedicle. The clinical findings, in general obscure, may then be changed by the rapid appearance of continuous or intermittent pain of varying intensity. To study the main features of the ovarian cysts with twisted pedicles, Dr. B. Neme analyzed the last 28 records of that condition seen in the obstetrical department of the Hospital das Clinicas (São Paulo State University) and published a report on this study in *Revista de Gynecologia e d'Obstetricia* (47:503, 1953). He found that this condition is rather rare, as demonstrated by the existence of only 28 cases in the files of the hospital between 1945 and 1952. The patients were from 19 to 53 years old; 5 were pregnant (2 with ectopic pregnancy); 22 were multiparas; and in 18 the involvement was on the right side. The torsions did not exceed five turns and the local lesions consisted only of hemorrhage of the wall or into the cavity of the cyst. Of the 16 cysts for which the type was recorded, 10 were serous cystadenomas, 3 were dermoid cysts and cysts of the corpus luteum, 2 were pseudomucinous cystadenomas, and one was a papilliferous cyst. The symptoms included pain in the lower abdomen in all patients (95% homolateral), tumor mass in 92.8%, nausea and vomiting in 75%, temperature elevation in 45.7%, and rebound tenderness in 42.8%. Puncture of the pouch of Douglas and radiography are helpful diagnostic procedures.

Revision of the Chromogenic Strains of the Genus Neisseria.—Dr. J. de Toledo Mello, São Paulo State University, studied the genus Neisseria and the systematic position of the flava subgroup of aerobic strains that develop well on ordinary culture mediums. No justification for the maintenance of the perflava and subflava species was found. Fermentation reactions in this group of bacteria are unstable and uncertain and may thereby give rise to an increase in the number of strains reported according to the amount of carbohydrates used. The Neisseria flavescens (Branham 1930), inactive on the four carbohydrates used for the identification of chromogenic strains of the Neisseria group, presents the same culture

The items in these letters are contributed by regular correspondents in the various foreign countries.

reactions described by Gordon in 1921. Its characteristics as a new species were based on serologic data obtained in agglutination tests, considered without value for the study of this group. It is suggested by Mello that the yellow strains of the Neisseria genus that do not grow on ordinary culture mediums be classified as a single species and be referred to as Neisseria flava (Bergey and others).

FINLAND

Duration of BCG Allergy.—The duration of BCG (bacille Calmette Guérin) allergy, as determined by the persistence of a positive tuberculin reaction after BCG vaccination, may be judged incorrectly when exposure to infection with virulent tubercle bacilli has by itself assured a positive tuberculin reaction. To avoid this element of confusion, the ideal would be to keep persons who are vaccinated with BCG under close supervision and out of contact with open cases of tuberculosis. With this ideal in mind, Dr. Ole Wasz-Höckert and Dr. Märta Donner of Helsinki have followed the tuberculin reactions of the inmates and staffs of six institutions for mental defectives. Since 1949, 565 members of these staffs have been tested, and 269 of them showed negative reaction to an injection of 1 mg. of tuberculin. As many as 224 of these 269 negative reactors were vaccinated with BCG. The vaccination was effected by intracutaneous injection, and the tuberculin testing that was carried out three months later was repeated twice a year with from 0.01 mg. to 1 mg. of tuberculin. The vaccinated subjects were also kept under yearly radiological control. The absence of infectious cases of tuberculosis in the environment of these persons was indicated by the persistence of negative tuberculin reactions several months before they were vaccinated with BCG. This investigation, recorded in *Nordisk Medicin,* Aug. 20, 1953, showed that among 200 vaccinated persons four (2%) were tuberculin-negative half a year after vaccination. This percentage was raised to 7.5% after one year, to 10.4% after one and one-half years, and to 29.5% after two and one-half years. It would thus seem that the tuberculin allergy effected by BCG does not last long in a large proportion of cases.

Cesarean Section.—At the University Gynecological Hospital in Helsinki, lately there has been a definite tendency to liberalize the indications for cesarean section. In his address at a meeting in 1952, Prof. Paavo Vara pointed out that at this hospital cesarean sections had constituted only 1.5% of the confinements in 1925, whereas the corresponding figure for 1950 was 5.38%. A recent study by Dr. Erik Aschan and Dr. Olavi Kinnunen from the same hospital reflects the same trend. Among 46,877 confinements at this hospital in the period 1945-1951, 151 were complicated by transverse and oblique positions of the infant. In 94 cases delivery was by cesarean section with the loss of only one infant. In 25 cases internal version was undertaken with the loss of four infants, and in 32 cases external version was undertaken with the loss of one infant. These figures give some support to the disapproval of internal version for transverse and oblique positions. The authors concluded that if external version fails and the patient is a primipara, Cesarean section is the method of choice. The same rule applies to multiparas with a narrow pelvis, placenta previa, early rupture of the membrane, or prolapse of the umbilical cord or a limb. In other patients delivery can be effected by the normal route.

The Early Diagnosis of Cancer of the Stomach.—Two recent articles in the Scandinavian medical press, both by Dr. Harry E. Bloomquist of the Maria Hospital in Helsinki, dealt with 372 patients with cancer of the stomach treated at this hospital in the 20 year period 1926-1945. About 25% of these patients presented signs and symptoms of cancer of the stomach two months or less before medical examination. In about 44% this interval was four months or less, and in about 60% this interval was six months or less. In only about 20% had this interval lasted longer than a year. A comparison of the length of this interval with the operability of the disease suggested that the shorter the interval the worse the prognosis; thus, in as many as 67 of 77 patients with a history of symptoms for two months or less the disease was found to be inoperable. In other words, it is the degree of malignancy that determines the prognosis irrespective of the previous duration of symptoms.

Although Blomquist has found a radiological examination capable of indicating a malignant tumor in 78.5% of his patients, he doubts the value of mass radiography of the stomach on the lines followed for wholesale examinations for pulmonary tuberculosis, because a radiologist could not make more than 20 such examinations daily and if a prophylactic radiological examination were to be made four times a year of the million inhabitants of Finland over the age of 40 years, 7,500 radiologists would be required for this service alone. The three month interval between examinations was based on the fact that about 50% of his patients had presented symptoms for less than four months. Even if prophylactic radiological examinations were to be confined to patients with chronic gastritis, the task would be far too great considering the high frequency of this condition. Blomquist found a palpable tumor in about 50%, free hydrochloric acid in 20.5%, blood in the feces in 75%, hemoglobin concentration (Sahli) of 80% or more in only 27.8%, and a normal sedimentation rate in 75% of the patients in this series.

Chemotherapy of Primary Exudative Pleurisy.—At a hospital in Åbo, comparative studies of various methods of treating primary exudative pleurisy have been undertaken. These studies, reported by Dr. Lennart Kalliomäki in *Duodecim,* incorporated in *Nordisk Medicin* for June 17, 1953, deal with three groups of patients. The first group, treated in 1947, contained 54 patients for whom rest in bed, tonics, and salicylic acid (Salicyl) were prescribed. The second group consisted of 40 patients who were treated with *p*-aminosalicylic acid (PAS). The third group consisted of 36 patients who, in addition to *p*-aminosalicylic acid given by the mouth, were given intramuscular injections of streptomycin. All the patients were kept in the hospital till they had become completely afebrile, and the sedimentation rate had fallen. Aspiration of pleural fluid was undertaken only when it was indicated by dyspnea. The comparative merits of the treatment the patients received in each of these three groups were examined in the light of the duration of the fever and the behavior of the sedimentation rate. The behavior of the sedimentation rate was much the same in all three groups, and there was no statistically significant difference in the duration of the fever.

LONDON

The General Practitioner and Lay Education in Cancer.—Lord Horder, chairman of the British Empire Cancer Campaign, stated in *Lancet* that those who favor a campaign of intensive lay education argue that even at the worst it must bring to light some patients in the earlier and potentially curable stage and that in any case a policy of diffusing knowledge is more likely to abolish than to create fear, which is largely born of ignorance. Those who take the opposite view argue that the best course is the strengthening of the relationship between patient and family doctor and that a policy that risked the danger of producing cancer neurosis might render the physician's task more difficult by keeping some genuine but fearful cancer patients away and by overloading the physician with cases of carcinophobia. Accordingly the cancer campaign issued a questionnaire asking all general practitioners: "Do you consider that the launching of a scheme of lay educational propaganda on cancer (by pamphlet, lectures, films, etc.) would be of assistance in securing the earlier diagnosis of cancer, and thereby improving the chances of a cure?" To 21,040 letters there were 5,053 replies, which is considered a high proportion of replies to this type of questionnaire. Of the replies, 2,148 were an unqualified "yes" and 2,683 an unqualified "no." The accompanying letters showed that a large number of practitioners had given much thought to the matter. Lord Horder makes no comment on these figures, but says that on the strength of them, the campaign will consider the matter further.

Clinical Research in the National Health Service.—Under the National Health Service Act of 1946, the Minister of Health was empowered to undertake research or to help others to do so, and a Clinical Research Board will be set up, to be responsible for promoting clinical research on a national basis. If the research organization is to work, there must be effective machinery for consultation at all levels, and provision is made for this. Careers in clinical research will be equated in all material respects with careers in the National Health Service. Research units will not be imposed on hospitals, nor will clinical research workers be promoted to senior posts without the agreement of the hospitals concerned. It is hoped that regional and hospital authorities will seek the advice and help of the Clinical Research Board about their research projects.

New Maternity Benefits.—Under the National Insurance scheme the maternity grant will be increased from $11.20 to $25.20 effective Oct. 26, 1953, and there will be an additional new grant of $8.40 for home confinements. For women not employed outside their own home duties, the home confinement grant of $8.40 will take the place of the former attendance allowance of $2.80 a week for the four weeks immediately after the date of the confinement. Women ordinarily working for an employer or self-employed will receive the $8.40 home confinement grant and a maternity allowance of $4.55 for the 18 weeks starting 11 weeks before the expected date of confinement, with additions in certain circumstances for dependents. This is instead of the present maternity allowance of $5.05 for the 13 weeks starting six weeks before the expected date of confinement. The home confinement grant will also be awarded for confinements that take place in any other institution or accommodation, such as a private nursing home, so long as the cost of accommodation and maintenance does not fall on public funds.

Hospital Priority for War Pensioners.—After transfer of the function of the Ministry of Pensions, priority will be given at all National Health Service hospitals to war pensioners needing examination or treatment for any condition related to the disability for which they are pensioned. This priority will be given subject only to the needs of emergency and other urgent cases that must take precedence, and hospital authorities are being asked to ensure that it is afforded in all cases where a condition related to an accepted disability is involved. Civilian and mercantile marine pensions will be dealt with in the same way as service pensioners. General practitioners are asked by the Ministry of Health to state clearly when referring war pensioners to hospitals in the National Health Service if the reference is in connection with an accepted disability, so that the necessary priority may be given.

Enrollment in Medicine.—The number of names in the current British Medical Register is 83,914, an increase of 1,658 over the corresponding figure on Jan. 1, 1952. In 1933 the total number on the register was 56,741. The number added by registration in 1952 (4,493) was the highest on record. As against this there were in 1952 an unusually large number of removals under the section of the Medical Act of 1858 that prescribes that names shall be removed after a stipulated period in the absence of any answer to the inquiry, whether there has been cessation of practice or change of address. The number removed under the penal sections of the act is no greater than it was 20 years ago, though in the meantime the total on the register has increased by 40%. The number of students beginning the medical curriculum proper during the year 1952-1953 is estimated at 2,512, which is about 50 fewer than for the previous year.

Under the Medical Act of 1950, full registration is not granted without proof of experience, namely, a certificate that the applicant has been engaged in employment in a resident medical capacity in one or more approved hospitals or institutions (including an approved health center) for the period prescribed by the regulations of the General Medical Council. Jan. 1, 1953, was appointed as the day after which a newly qualified person would not be eligible for full registration until he had, after passing his qualifying examination, served as house officer in one or more such approved hospitals or institutions for 12 months.

British Pharmacopoeia, 1953.—The eighth British Pharmacopoeia, published in March, 1953, became official in September in accordance with the program for quinquennial revision approved by the General Medical Council. According to the *British Medical Journal* of Sept. 19, 1953, the new number contains 115 monographs on substances that were not official in 1948, and 130 monographs of the previous edition have been deleted. The immediate impressions on opening the volume are the novelty of the English titles, the new arrangement of the monographs, and the clarity of the printed matter. No longer do we find "Toxinum Diphthericum Detoxicatum" but "Diphtheria Prophylactic," not "Oculenta—Ointments for the Eye" but "Eye Ointments." The names of many other preparations have been rationalized, so that, for example, the words "aspirin tablets" and not only "tablets of aspirin" now connote an official article. By the new arrangement of the monographs, preparations such as ointments, injections, or tablets follow immediately after the monograph on the active ingredient, and, although this will be a convenience to physicians and analysts, it will demand changes in the habits of thought of pharmacists. Some comment on the change from Latin to English titles was made at the recent British Pharmaceutical Conference, at which there was a debate between those for and those against the writing of prescriptions in English instead of Latin. Prof. A. D. Macdonald said that medical and chemical specialists, in their comments on the new pharmacopoeia, seemed to support English to a man. The pharmacists were about 2 to 1 in favor.

The introduction to the new pharmacopoeia contains informative tables showing the rejections and selections made by the Pharmacopoeia Commission. Nineteen vegetable drugs and their numerous tinctures, infusions, syrups, and extracts have been deleted either because of their therapeutic inadequacies or because the active principle, for example, ergonovine, is available as a pure stable substance. All the pharmacopoeial pills and lozenges (except penicillin lozenges), the liniments of aconite and of belladonna, and some spirits and little-used injections no longer appear. Capsules and implants have been introduced as a dosage form of certain medicaments. In the list of additions the modern synthetic chemicals and the antibiotics appear most frequently. Penicillin and procaine penicillin, the streptomycins, chlortetracycline (aureomycin), and chloramphenicol, with their preparations, account for 15 monographs not present in the 1948 edition. Among other monographs appearing for the first time are those on methadone, phenadoxone hydrochloride, globin zinc insulin, scarlet fever antitoxin and prophylactic, cyanocobalamin (vitamin B_{12}), and sodium aminosalicylate.

The statements on dosage of the drugs show two general changes; both might be taken with advantage a step further in the next edition. Doses are given only in the metric system except for substances and preparations commonly used or prescribed in the Imperial system. Grain doses for the sulfonamides and sex hormones and minim doses for typhus vaccine are omitted. The tendency to expand information on dosage increases the value of the book to the prescriber. For methylthiouracil and propylthiouracil the controlling dose and the maintenance dose are now given; for sodium iodide there is a dose for the treatment of thyrotoxicosis; and the dose of picrotoxin is given for treatment of barbiturate poisoning.

White Bread.—Statutory orders that came into force on Aug. 30 have removed the restrictions on the extraction rate of flour, thus permitting a return to the white loaf. The orders require, however, that calcium in the form of creta praeparata (1 oz. to 20 lb. or 1 gm. to 320 gm.) shall be added to all flour; and that iron, thiamine, and nicotinic acid shall be added to flours of extraction rate lower than 80%, the rate for national flour. Only bread made from national flour remains controlled in price.

Artificial Sweeteners in Food.—In the future only saccharin will be permitted as an artificial food sweetener (Artificial Sweeteners in Food Order, 1953). This follows a recommendation from the Medical Research Council. Saccharin is known to be harmless, but according to the Council's Food Adulterants Committee the use of certain other artificial sweetening agents may be dangerous to health.

CORRESPONDENCE

DEATH AND DISTINCTION

To the Editor:—It is well known that, during the first half of the present century, there was a marked increase in the expectation of life for both sexes. The purpose of this letter is to suggest that those members of the medical profession, who belong to that branch of the profession that has played the greatest part in this achievement, have not themselves shared in the achievement and why this is so. Advantage has been taken of the obituary notices in THE JOURNAL in which the cause of death is stated in a high proportion.

From the beginning of 1950, two series of extracts have been prepared, one containing those persons selected for distinction in as far as they were placed first in the lists without regard to alphabetical order and one containing those whose notice failed to occupy the whole of three lines. That such a method of distinguishing prominent members of the medical profession may involve injustice cannot be denied; in general, however, it must distinguish between success and failure in relation to the particular standards involved.

To obtain 500 consecutive notices in each group in which both the age of the subject and the cause of death was stated, 1,313 entries were abstracted; in 313 the age but not the cause of death was noted. The average age of death for these two groups was then calculated: distinguished, 578 persons with average age 67.1 years, and undistinguished, 735 persons with average age 72.3 years. The difference of 5.2 years in the expectation of life between the two groups is obviously significant, and the following table shows the distribution of deaths within them according to age.

	Distinguished		Undistinguished	
Age, Yr.	Number	% of Total	Number	% of Total
Under 40	7	1	15	2
40-49	45	8	23	3
50-59	90	16	55	8
60-69	170	29	164	22
70-79	180	31	254	35
80-89	73	13	185	25
90 and over	13	2	39	5
Total	578	100	735	100

Taking the biblical figure of three score years and ten as an adequate expectation of life for those who reach maturity, it will be noted that, while 65% of the undistinguished reached this goal, only 46% of the distinguished did so.

In the analyses of the causes of death of 500 persons in each of the two groups, the outstanding features are the low incidence of fatal disease of the respiratory tract, resulting from the discovery of sulfonamides and antibiotics, and the high incidence of cardiovascular degeneration. The major causes of death are listed in the following table.

	Distinguished		Undistinguished	
Cause of Death	Number	%	Number	%
Cardiovascular	325	65.0	332	66.4
Respiratory	23	4.6	25	5.0
Neoplastic	78	15.6	66	13.2
Accidental	24	4.8	21	4.2
Miscellaneous	50	10.0	56	11.2
Total	500		500	

It is clear that there is no significant difference between the two groups in the percentage of deaths resulting from any of the main causes, and it, therefore, appears that the difference in the average age of death between the distinguished and undistinguished must be due to a different age incidence for death in one or more of the groups. The following table shows an analysis of the figures to demonstrate this, excluding the accidental deaths and those resulting from miscellaneous causes.

	Distinguished		Undistinguished	
	Number	Average Age	Number	Average Age
Cardiovascular disease	325	67.2	332	72.5
Respiratory disease	23	75.5	25	77.8
Neoplasms	78	65.1	66	74.3
Total	426	67.6	423	73.1

It is of interest that, although the figures in this series are not large, the age incidence of neoplasms in the two groups shows as marked a disparity as that for cardiovascular diseases, a finding that certainly warrants further investigation.

The figures for deaths resulting from cardiovascular disease are sufficiently large to indicate that the distinguished have a poorer expectation of life than the undistinguished in this respect, and a further analysis (the next table) shows this to be due not only to the incidence and age occurrence of coronary occlusion, but to a trend involving all types of cardiovascular deterioration.

	Distinguished			Undistinguished		
	Number	%	Average Age	Number	%	Average Age
Coronary occlusion	164	50.5	65.1	135	40.7	69.0
Cerebrovascular accidents	54	16.6	69.3	76	22.9	75.4
Arteriosclerosis and hypertension	43	13.2	72.3	34	10.7	79.3
Unspecified and miscellaneous heart disease	64	19.7	69.3	87	26.2	72.5
Total	325		67.2	332		72.5

It is to be noted that in all groups the average age of death is substantially lower in the distinguished persons. The higher proportion and lower average age of deaths attributed to coronary occlusion are prominent factors. The following table shows the distribution of these deaths by age groups.

	Distinguished		Undistinguished	
Age, Yr.	Number	%	Number	%
Under 40	1	0.6	2	1.5
40-49	13	7.9	5	3.7
50-59	32	19.5	15	11.1
60-69	61	37.2	40	29.6
70-79	44	26.8	50	37.0
80-89	12	7.3	22	16.3
90 and over	1	0.6	1	0.7
Total	164		135	

These figures show that, whereas 65% of the coronary deaths in the distinguished occurred before the age of 70, only 46% did so in the undistinguished. In order to confirm the low average age of death from coronary occlusion in the distinguished, all deaths attributed to this cause in this group were abstracted for the years 1947 to 1949 inclusive. This gave 175 more deaths with an average age of 64.2 years, of which 65% (the same figure as in the first group) were under 70 years. These combined figures, therefore, appear to warrant the conclusion that coronary occlusion is a more important cause of premature death in distinguished as opposed to undistinguished members of the medical profession.

The Registrar-General's "Occupational Supplement" (England & Wales) covering 1930-1932 indicates that the medical profession is prone to coronary disease, even at that time, over 3½ times that of the rate for average men and more than 10 times that of agricultural laborers. The question as to whether a successful, as compared to an unsuccessful, pro-

fessional career contributes to this risk is a fresh problem, and the evidence presented indicates that it deserves careful consideration.

In the Harveian Oration for 1946, as reported in *The Lancet*, Sir Maurice Cassidy posed the question "Does the population really work harder or live more strenuous lives than their grandfathers did?" He gave as his reply that he doubted it. Both the question and the answer appear to miss the point. The weight of the increased incidence of coronary occlusion has fallen on the professional class, and on the medical profession in particular. If the question were put "Does the physician and surgeon of today live more strenuously and more anxiously than those of two generations past?" the only answer possible is "Certainly!" It is unfortunate that the Victorian was reticent about his age and that the obituary notices of that period seldom stated the cause of death, so that an adequate comparison of a physician's life expectancy then with that today is difficult to make. Between 1897 and 1916 there died 258 members of the medical profession in England who were sufficiently distinguished to be included in "Who's Who" and whose date of birth was mentioned in that work. The following table shows the percentage dying from all causes in the various age groups, and it indicates that the life expectancy for the distinguished has not improved.

Age, Yr.	Who's Who (1897-1916)	The Journal (1950-1952)
Under 40	2%	1%
40-49	4%	8%
50-59	14%	16%
60-69	29%	29%
70-79	29%	31%
80-89	18%	13%
90 and over	3%	2%
Average age	69.5 yr.	67.1 yr.

It seems contrary to obvious facts not to conclude that the medical profession has maintained its financial and social status by working twice as fast with the aid of mechanical devices. Though to the conservative physician the attribution of such organic disease, as is involved in the atheroma-arteriosclerosis-hypertension syndrome and its lethal complications, to anything so nebulous as the psychosomatic concept of mental exhaustion and anxiety is obnoxious, it cannot be denied that evidence in favor of this view is accumulating steadily. As has been remarked by R. H. Ward, "We do not live in an age of reason or even in an age of romance, but in the age of anxiety," and it is upon those who live by their intellect, if not by their intelligence, that the impact of such an age must fall.

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WEAKNESSES OF SCIENTIFIC LITERATURE

To the Editor:—This is an appeal to you, and to other scientific editors, for a realistic appraisal of the difficulties that minimize greatly the value of scientific literature to physicians. After discussing this situation over a period of 10 years with physicians who have been out of medical school for 5 years or longer, I feel my criticisms are valid and worth while.

First of all, all or most lecturers, authors, editors, and publishers presuppose an intimate and fresh knowledge of histology. The obvious fact is that this is not so. The great majority of physicians who open a book on pathology and look at a microscopic illustration are frustrated because they have little or no concept of what is being seen, shown, or meant. Why can't these microscopic illustrations have legends, or arrows, as in the book by Netter and others? This way the physician eventually knows what he is seeing. Certainly the need for help is greater in illustrations of pathological conditions than in anatomic illustrations. Without recent instruction in histology, which the majority of physicians forget soon after being out in practice, all pathology illustrations are buried in an envelope of vincible ignorance that precludes easy understanding unless simple help is given by means of arrows or legends.

While the use of designations such as kilograms, grams, decimals for fractions of doses, centimeters, and centigrade temperatures is scientific, they greatly minimize the value of articles written primarily for American readers; few will take time to translate these terms into the understandable and familiar pound, gram, ounce, grain, inch, and Fahrenheit equivalents. If written in familiar terms, an American reader would have a quicker grasp, insight, and picture, while the foreign reader would have a greater motivating reason to translate them in his terms.

Why are the terms "the former and latter" used so often when it would be much easier to repeat, and to remember, "the former and latter" statement, especially a paragraph later? It is a source of irritation and it is a psychological obstruction. As a result, the purpose or value is minimized.

Because of the avalanche of literature a general practitioner has to, or should, read and because of a lack of time and/or mental inertia, anything that will make reading easier or provide a quicker grasp and faster insight is worth while. My points and arguments may be specious. They can be answered by stating that if articles and illustrations are worth while, time should be taken to read them. Because exercise of the intellect implies discipline and more energy than is available at times, I feel that these criticisms are valid and that they should be considered for more realistic reading, understanding, and value on a practical level. To paraphrase Henry Adams: "Nothing in scientific literature is so astounding, as the amount of ignorance that is left in the form of inert facts."

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Milwaukee, Wis.

TREATMENT OF RINGWORM OF THE SCALP

To the Editor:—I would like to suggest a method of treatment of ringworm of the scalp, which has been consistently effective in from one to two weeks. Immediate epilation would be ideal. Manual epilation is inefficient because of the tendency of the diseased hairs to break off in the follicles and to leave the bases intact. As a result the hyphae are protected from the fungistatic effect of the medicament. The use of adhesive plaster has been proved equally unsatisfactory for the same reason. Many years ago a barbarous method was employed called the "Tar Cap" or capellus piceus. It consisted of covering the entire scalp with molten tar and then, when it hardened, removing it together with all the hair, normal as well as diseased.

About seven years ago, I tried to find a method by which the diseased hairs could be removed at the beginning of treatment rather than after months of futile effort. I decided on using collodion and it proved eminently successful. At present, I proceed as follows. The normal hair is clipped to about ¼ in. (0.64 cm.) in length in an area about ¾ in. (1.91 cm.) wide around the area involved. The ringworm and the surrounding area are painted with Carbo-fung solution (a proprietary preparation containing alcohol, acetone, resorcinol, phenol, fuchsin, and inert ingredients). When used in this way, this preparation apparently kills the ectothrix spores and, because of its vivid color, gives assurance to school authorities that the child is under treatment. Then several layers of collodion are poured over the ringworm and allowed to dry. The collodion immeshes the stubble of hair down to the scalp. After three days, with ordinary activity on the child's part, the hairs are loosened. The collodion dressing is removed with forceps. There is amazingly little pain. The hairs come out very readily. Normal hair imbedded in the collodion is clipped beneath it. The infected area is free of hair. Thereafter, the mother is instructed to paint the area daily with Carbo-fung solution and to return in one week. In every instance, when the child returned, there was no evidence of fluorescence and no further spread or recurrence. This method combines epilation with the protection of others from contamination.

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Postgraduate Continuation Courses for Physicians

Compiled by the Council on Medical Education and Hospitals for the Period Jan. 1, 1954, to July 15, 1954

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ADMINISTRATIVE MEDICINE			
Columbia University School of Public Health, 600 W. 168th St., New York 32	Administrative Medicine [46]	September, 21 months, full time	$1,045.00
ALLERGY			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Personal Course in Allergy	Arranged, 6 months, full time	500.00
	Personal Course in Allergy	Arranged, every month, 1 month, full time	200.00
	Personal Course in Allergy and Related Conditions	March 24, 10 days, part time	125.00
The American College of Allergists, Inc., 401 LaSalle Medical Bldg., Minneapolis 2			
At: Roney Plaza Hotel, Miami Beach 39, Fla.	Decennial Graduate Instructional Course in Allergy	April 5-7, full time	65.00
	Decennial Congress	April 8-10, full time	None
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16 [1]			
At: Beth El Hospital	Allergy	April, once weekly, 9 weeks, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Allergy	Arranged, 2 months, part time	50.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Allergy	Arranged, twice weekly, part time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5416-A Refresher Course in Allergic Conditions	March 15-17, full time	35.00
	543-A Allergy	April 16-June 4, part time	40.00
American Academy of Allergy, 208 E. Wisconsin Ave., Milwaukee, Wis.			
At: Shamrock Hotel, Houston, Texas	Clinical Allergy	January 29-31, full time	40.00
	Pollens and Molds	January 29-31, full time	35.00
	Advanced Seminars in Allergy [2]	January 30-31, part time	15.00
ANATOMY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Surgical Anatomy; Demonstration and Lectures	January 20-May 12, once weekly, part time	100.00
	Surgical Anatomy; Demonstration and Lectures	May 17-June 9, twice weekly, part time	100.00
Yale University School of Medicine, 333 Cedar St., New Haven, Conn. [3]	Anatomy 201 Special Dissections	Arranged, part time	None
Indiana University School of Medicine, Indianapolis	Clinical and Anatomical Course in Otolaryngology	April 5-17, full time	200.00
	Review Course in Surgical Anatomy	January 1-May 19, once weekly, part time	72.00
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1	Surgical Anatomy [47]	January, 15 weeks, part time	150.00
	Anatomy of Head as Applied to Eye, Ear, Nose and Throat Surgery [48]	Arranged, 18 weeks, part time	150.00
	Gross Anatomy [48]	Arranged, 6 months, part time	[49]
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15	Surgical Anatomy	March 1-April 23, part time	200.00
University of Michigan Medical School, Ann Arbor	Anatomy	February 11-May 27, 16 days, part time	65.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Surgical Anatomy	March 15, 12 weeks, part time	50.00
	Regional Anatomy—Thorax, Abdomen and Pelvis	March 15, 12 weeks, part time	50.00
	Regional Anatomy—Back and Extremities	March 15, 12 weeks, part time	50.00
	Regional Anatomy—Head and Neck	March 15, 12 weeks, part time	50.00
Cornell University Medical College, 1300 York Ave., New York 21	Surgical Anatomy	May 31-June 26, full time	200.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Applied Anatomy for the General Surgeon	Arranged, 250 hours, part time	375.00
	Anatomy of the Thorax	Arranged, 100 hours, part time	150.00
	Anatomy of the Abdomen	Arranged, 100 hours, part time	150.00
	Applied Anatomy for the Otolaryngologist	Arranged, 150 hours, part time	275.00
	Applied Anatomy of the Urogenital System	Arranged, 130 hours, part time	300.00
	Applied Anatomy for the Anesthetist	Arranged, 125 hours, part time	275.00
	Anatomy for the Orthopedic Surgeon	Arranged, 100 hours, part time	150.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ANATOMY—Continued		
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Anatomy Course	Arranged, six 3-hour sessions, part time	$300.00
	Surgical Anatomy	Arranged, six 2-hour sessions, part time	200.00
	Operative Surgery	Arranged, six 3-hour sessions, part time	300.00
	Regional Anatomy	Arranged, three 2-hour sessions	150.00
	Surgical Anatomy	Arranged, 2 weeks, part time	150.00
	Surgical Anatomy, Dissections, Demonstrations and Lectures	Arranged, part time	200.00
	Anatomy, Dissections, Demonstrations and Lectures	Arranged, part time	200.00
	Head and Neck Dissection	Arranged, 6 weeks, part time	150.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	Course 412-A Anatomy of the Thorax and Its Viscera	January 4-March 26, part time	90.00
	414-A Anatomy of the Female Pelvis	January 4-March 26, part time	90.00
	415-A Anatomy of the Genitourinary System	March 29-June 18, part time	90.00
	416-A Anatomy of the Musculoskeletal System	March 29-June 18, part time	90.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City	The Roentgenology of the Normal, Including Borderlands and Variations	February 16, 10 weeks, part time	50.00
University of Pittsburgh School of Medicine, Dept. of Anatomy, 300 Pennsylvania Hall, Pittsburgh 13	Applied Anatomy	October 12-June 3, twice weekly, full time	[80]
University of Washington School of Medicine, Seattle 5 [4]	Applied Anatomy of the Thorax	March 24-June 2, part time	Not given
	ANESTHESIOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Anesthesiology	Every 2 months, 4 months, full time	300.00
University of California School of Medicine, Los Angeles	Anesthesiology	May 13, 14, full time	Not stated
University of Southern California School of Medicine, 1200 N. State St., Los Angeles At: Los Angeles County Hospital	892 Anesthesia	Arranged, 12 weeks, full time	300.00
St. Francis Hospital, 114 Woodland St., Hartford 5, Conn.	Anesthesiology—General and Regional	January 1, April 1, July 1, 1 month, full time	None
American Society of Anesthesiologists, Inc., 188 W. Randolph St., Chicago 1 At: 15 centers	Anesthesia for General Practitioners	Arranged, full time	Not given
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Practical Course in Spinal and Intravenous Anesthesia	Arranged, every 2 weeks, full time	150.00
	Practical Course in Nitrous Oxide and Ether Anesthesia	Arranged, every month, 1 month, full time	125.00
	Practical Course in Ether, Nitrous Oxide, Ethylene and Cyclopropane Anesthesia	Arranged, every month, 1 month, full time	200.00
	Practical Course in Endotracheal Anesthesia	Arranged, every 2 weeks, full time	150.00
University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12 [99]	Postgraduate Course in Anesthesiology	April 12-14, full time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Clinical Anesthesiology	Arranged, 3 months, full time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Applied Anesthesiology	January, April, 3 months, part time	300.00
	Anesthetic Technic	January, April, 1 week, part time	100.00
	Regional and Spinal Anesthesiology	January, April, 2 weeks, part time	150.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	512-A Regional Anesthesiology	January 4-16, full time	200.00
	512-A Regional Anesthesiology	May 17-29, full time	200.00
	510-B Anesthesiology: Endotracheal and Related Methods	January 18-23, full time	75.00
	512-B Regional Anesthesiology	May 17-29, full time	200.00
University of Pennsylvania Graduate School of Medicine, Philadelphia 4	Recent Advances in the Pharmacology of Anesthetic Agents	March 9-11, full time	60.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13	Anesthesia	June, 1 week, full time	25.00
University of Texas Postgraduate School of Medicine, Temple At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Anesthesiology	January-June, 4 weeks, full time	25.00
	ARTHRITIS		
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Arthritis	Arranged, 8 weeks, part time	50.00
University of Buffalo School of Medicine, 24 High St., Buffalo, N. Y.	Arthritis	March 10, full time	15.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13 At: D. T. Watson School of Physiatrics	Protective Body Mechanics in Arthritis	March and April, 5 weeks, part time	10.00
	BACTERIOLOGY		
U. S. Public Health Service Communicable Disease Center, Virus and Rickettsia Laboratories, Montgomery, Ala.	Laboratory Diagnosis of Virus Diseases	March 15-26, full time	None
Yale University School of Medicine, 333 Cedar St., New Haven, Conn.[8]	Microbiology 210, Diagnostic Medical Mycology	Arranged, 3 months, twice weekly, part time	100.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Microbiology Seminar	Every quarter, 12 weeks, part time	15.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Immunology	Arranged, 6 weeks, part time	50.00
	Bacteriology	Arranged, 3 months, part time	100.00
	Parasitology	Arranged, 6 weeks, part time	75.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	432-A Viruses and Virus Diseases	March 22-May 8, full time	211.00
	BASIC SCIENCE		
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33	820 Basic Science	Arranged, 100 hours, part time	200.00
University of Colorado Medical Center, Office of Graduate and Postgraduate Medical Education, 4200 E. Ninth Ave., Denver 20	Radiological Physics	January 2-May, once weekly, part time	28.00 per quarter
	Basic Sciences	Arranged, 36 hours, part time	52.00 per quarter (resident) 117.00 per quarter (non-resident)
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1	Basic Sciences as Applied to the Practice of Medicine	Arranged, 33 weeks, part time	50.00

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	BASIC SCIENCE—Continued		
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Cellular Physiology	March 13, 12 weeks, part time	$30.00
	Seminar	Every quarter, 12 weeks, part time	15.00
University of South Dakota School of Medical Sciences, Vermillion	Master of Medical Science	February 1, July 1, 9 to 12 months, full time	100.00
	Postgraduate Basic Science Course	February 1, 18 weeks, part time	75.00
	CARDIOVASCULAR DISEASE		
Los Angeles County Heart Assn., 316 S. Bonnie Brae St., Los Angeles 57			
At: Approved hospital clinics in Los Angeles County	Postgraduate Preceptceships in Cardiology for the General Practitioner	Arranged, 12 weeks, part time	15.00
University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22	Cardiovascular Disease	February 1-5, part time	Not given
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33	834 Electrocardiography	Arranged, 6-12 weeks, part time	[100]
George Washington University School of Medicine, 1335 H St., N. W., Washington 5, D. C.			
At: George Washington University Hospital	Cardiovascular Diseases	March 15-19, full time	75.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]			
At: Grady Memorial Hospital	Cardiovascular Disease	April 1, full time	5.00
Indiana University School of Medicine, Indianapolis	Annual Symposium on the Heart	February 3, full time	None
	Postgraduate Course in Electrocardiography	March 1-4, full time	50.00
University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12 [99]	Physical Diagnosis and Auscultation of the Heart	March 22-25, full time	40.00
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 12, La.	Cardiology	March 15-19, full time	50.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Beth Israel Hospital	Cardiology 1	January 25-May 7, full time	500.00
At: Peter Bent Brigham Hospital	Clinical Heart Disease	July 1-30, full time	200.00
University of Michigan Medical School, Ann Arbor	Diseases of the Heart	March 15-19, full time	50.00
University of Minnesota Center for Continuation Study, Minneapolis 14 [9]	Cardiovascular Diseases for General Physicians	March 22-24, full time	25.00
Mississippi Heart Association, Jackson, Miss.			
At: University of Mississippi School of Medicine	Cardiology	February 8-12, full time	5.00
Seton Hall University School of Education, 31 Clinton St., Newark 2, N. J.[101]			
At: Newark City Hospital	Clinical Cardiology	March 12, once weekly, part time	100.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Mt. Sinai Hospital	Medicine PM 31 Cardiovascular Diseases [16]	January 18-29, full time	110.00
	Medicine PM 48 Heart Disease and Circulatory Dynamics	February 16-April 20, part time	45.00
	Medicine PM 43 Spatial Vectorcardiography	March 15-20, full time	60.00
At: Montefiore Hospital	Medicine PM 62 Cardiology II—Section B	February 2-June 1, part time	150.00
	Medicine PM 63 Cardiology III—Section B	February 2-June 1, part time	200.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn [1]			
At: Jewish Sanitarium and Hospital for Chronic Diseases	Clinical Ballistocardiography	April, once weekly, 8 weeks, part time	20.00
At: Coney Island Hospital	Cardiovascular Disease	April, once weekly, 10 weeks, part time	20.00
At: Beth El Hospital	Clinical Cardiology	April, twice weekly, 6 weeks, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Cardiology	Arranged, 20 weeks, part time	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Diagnosis and Treatment of Diseases of the Heart	Arranged, 3 weeks, part time	75.00
New York State Department of Health, Albany			
At: New York University-Bellevue Medical Center	Auscultation of the Heart	Spring, 3 days, full time	50.00
	Modern Concepts in Etiology, Diagnosis and Treatment of Heart Disease	Spring, 5 days, full time	50.00
New York State Department of Health, Albany 1 [7]	Cardiovascular Disease	January, 2 weeks, full time	140.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5431-A Modern Concepts in the Etiology, Diagnosis and Treatment of Heart Diseases	January 11-15, full time	50.00
	544-A Cardiology	April 15-June 3, full time	75.00
	5425-A Cardiology	June 28-July 23, full time	250.00
St. Francis Sanatorium for Cardiac Children, Roslyn, N. Y.	Comprehensive Postgraduate Course in Heart Diseases in Children and Young Adults	June 2-18, full time	125.00
North Carolina State Board of Health, Raleigh, N. C.			
At: Bowman Gray School of Medicine of Wake Forest College, Winston-Salem 7	Cardiovascular Disease	March, 3 days, full time	None
The Cleveland Area Heart Society, 2073 E. 9th St., Room 518, Cleveland 15, Ohio			
At: Western Reserve University	Cardiac Resuscitation Course	Arranged, monthly, 1½ days, full time	[81]
The American College of Physicians, 4200 Pine St., Philadelphia			
At: Johns Hopkins Hospital, Baltimore, Md.	Ballistocardiography	January 11-13, full time	30.00 Members; 60.00 Non-members
Hahnemann Medical College and Hospital, 230 N. Broad St., Philadelphia 2	Postgraduate Cardiology Course	Arranged, 30 weeks, once weekly, part time	150.00
Medical Society of State of Pennsylvania, Commission on Graduate Education, 230 State St., Harrisburg, Pa.[8]			
At: Conemaugh Valley Hospital, Johnstown and Mellon Institute, Pittsburgh	Cardiology	Johnstown, January 7-March 11, part time	50.00
		Pittsburgh, January 20-March 24, part time	[83]
University of Pennsylvania Graduate School of Medicine, Philadelphia	Cardiology	January and March, 8 days, full time	80.00
University of Texas Postgraduate School of Medicine, 1400 Outer Belt Drive, Houston [102]	Heart Seminar	February 15-19, full time	25.00

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
DERMATOLOGY AND SYPHILOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Dermatology	January 6-March 24, once weekly, part time	$40.00
University of California School of Medicine, Los Angeles At: Veterans Administration Hospital	Dermatology in General Practice	February 17-March 24, part time	30.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical Course in Dermatology	Arranged, 12 months, full time	1,000.00
	Clinical Refresher Course in Dermatology	Arranged, 2 or more weeks, full time	75.00
	Intensive Course in Dermatology	May 10, 2 weeks, full time	100.00
	Part-Time Course in Dermatology	March 24, 10 days, part time	100.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich. At: Receiving Hospital	Superficial Mycoses	March 13, 12 weeks, part time	30.00
	Deep Mycoses	March 15-June 12, part time	30.00
	Seminar in Dermopathology	Every quarter, 12 weeks, part time	15.00
	Seminar in Dermatology	Every quarter, 12 weeks, part time	15.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Columbia Presbyterian Medical Center	Dermatology GM 1-A Advanced Dermatology	July 1, 6 to 12 months, full time	230.00-460.00
	Dermatology GM 1 Clinical Dermatology	July 1, 6 to 12 months, full time	230.00-460.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Dermatology and Syphilology for the General Practitioner (Seminar)	Arranged, 5 days, part time	75.00
	Dermatology and Syphilology for Specialists (Seminar)	Arranged, 5 days, part time	75.00
	Dermatologic Histopathology (Seminar)	Arranged, 5 days, part time	75.00
	Training for Specialization in Dermatology and Syphilology	Arranged, 3 years, full time	1,000.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	522-A Seminar in Dermatology and Syphilology [53]	January 18-22, full time	75.00
	523-A Symposium on Dermatology and Syphilology	May 17-21, full time	85.00
Queens County Medical Society Graduate Education Committee, 112-25 Queens Blvd., Forest Hills, N. Y.	Dermatology	March, once weekly, part time	15.00
University of Pennsylvania Graduate School of Medicine, Philadelphia At: Graduate Hospital	Dermatology for the General Practitioner	March 16-17, full time	40.00
University of Texas Postgraduate School of Medicine, Temple At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Dermatology and Syphilology	Arranged, 2 weeks, full time	25.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25 At: Auditorium-Lounge, Texas Medical Association Library, Austin, Texas	Dermatology	January or February, 1954, 8 weeks, part time	25.00
DIABETES			
Florida State Board of Health, Department of Medicine, 1625 Riverside Ave., Jacksonville [98] At: Orlando	2d Annual Meeting Florida Clinical Diabetes Association	Spring, 2½ days, full time	10.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5] At: Grady Memorial Hospital	Diabetes	March 4, full time	5.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Course in Medical and Surgical Diabetes	March 24, 10 days, part time	100.00
American Diabetes Association, Inc., 11 W. 42d St., New York 36 At: Mayo Clinic and Mayo Foundation, Rochester, Minn.	Diabetes and Basic Metabolic Problems [54]	January 18-20, full time	Members: 40.00 Non-Members: 75.00
Clifton Springs Sanitarium and Clinic, Clifton Springs, N. Y.[9]	Diabetes: Its Management in General Practice	May, 1 day, full time	None
DISEASES OF THE CHEST			
American College of Chest Physicians, 112 E. Chestnut St., Chicago 11 At: Tulane University, New Orleans, La.[10]	Postgraduate Course in Diseases of the Chest	February 15-19, full time	75.00
At: Bellevue-Stratford Hotel, Philadelphia [11]	Seventh Annual Postgraduate Course in Diseases of the Chest	March 15-19, full time	75.00
Iowa Academy of General Practice, 912 Equitable Bldg., Des Moines 9 At: Hotel Savery	Chest Diseases Other Than Tuberculosis	January 21, full time	5.00 non-members
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 At: Montefiore Hospital	Medicine PM 71 Diseases of the Chest	January 8-May 29, part time	100.00
At: Bellevue Hospital	Medicine PM 80 Diseases of the Chest	February 1-28, full time	[55]
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Diseases of the Chest	March and April, 2 months, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	548-A Acute and Chronic Diseases of the Chest	April 12-May 24, part time	35.00
University of Texas Postgraduate School of Medicine, Temple, Texas At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Diseases of the Chest	Arranged, 2 weeks, full time	25.00
University of Utah, Division of Graduate and Postgraduate Medical Education, 175 E. 21st St. S., Salt Lake City At: Salt Lake County General Hospital	Diseases of the Chest	April 14-16, full time	30.00
ELECTROCARDIOGRAPHY			
Los Angeles Graduate School of Medicine, 1858 W. Washington Blvd., Los Angeles 7	Electrocardiography	Once weekly, 12 weeks, full time	60.00
University of California School of Medicine, Los Angeles At: Campus and San Diego	Electrocardiography	June 2, 18, part time	20.00
University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22	Electrocardiography	February 1-5, part time	Not given

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Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ELECTROCARDIOGRAPHY—Continued			
Yale University School of Medicine, 333 Cedar St., New Haven, Conn.[3]	Medicine 215 Clinical Tutorial Electrocardiography	Arranged, 12 weeks, once weekly, part time	$75.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.			
At: Emory University Hospital	Electrocardiography	February 8-10, full time	60.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Personal Course in Electrocardiography and Heart Disease	February 10, 10 days, part time	150.00
	Intensive Course in Electrocardiography and Heart Disease	March 14 and July 12, 2 weeks, full time	150.00
Beth Israel Hospital, Boston, Mass.	"Ekg Clinics" Course "C"	March 1-5, full time	100.00
	"Ekg Clinics" Course "D"	March, April, and May, 10 weeks once weekly, part time	100.00
Tufts College Medical School, Postgraduate Division, 171 Harrison Ave., Boston 11, Mass.[12]			
At: New England Center Hospital	Electrocardiography II	January 11-13, full time	25.00
University of Michigan Medical School, Ann Arbor			
At: University Hospital	Electrocardiographic Diagnosis	March 22-27, full time	75.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Electrocardiography for General Physicians	May 10-15, full time	40.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Mt. Sinai Hospital	Medicine PM 41 Intensive Course in Elementary Electrocardiography	January 4-9, full time	60.00
	Medicine PM 42 Intensive Course in Advanced Electrocardiography	January 4-9, full time	60.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Electrocardiography	Arranged, 2 weeks, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Electrocardiographic Interpretation	Arranged, 2 weeks, part time	75.00
New York State Department of Health, Albany			
At: New York University-Bellevue Medical Center	Electrocardiography	Spring, 5 days, full time	75.00
New York State Department of Health, Albany 1, N. Y.[7]			
At: Mount Sinai Hospital	Electrocardiography (Elementary)	January, 1 week, full time	60.00
	Electrocardiography (Advanced)	January, 1 week, full time	60.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5423-B Electrocardiography	March 29-April 2, full time	75.00
	544-B Clinical Electrocardiography	April 15-June 3, part time	40.00
Queens County Medical Society Graduate Education Committee, 112-25 Queens Blvd., Forest Hills, N. Y.	Clinical Electrocardiography	Arranged, 2 days, part time	25.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City	Electrocardiography	March 1-6, full time	60.00
University of Pennsylvania Graduate School of Medicine, Philadelphia 4	Electroencephalography	Arranged, 2 weeks, full time	200.00
At: Philadelphia General Hospital	Graphic Methods Used in Cardiovascular Diagnosis with Particular Emphasis on Electrocardiography	January 13-March 10, once weekly, part time	50.00
University of Texas Postgraduate School of Medicine, Temple			
At: Scott and White Memorial Hospitals; Scott, Sherwood and Brindley Foundation	Electrocardiology	Arranged, 2 weeks, full time	25.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25			
At: Shannon West Texas Memorial Hospital, San Angelo	Fundamentals of Electrocardiography	January-May, once weekly, part time	20.00
University of Utah, Division of Graduate and Postgraduate Medical Education, 175 E. 21st St. S., Salt Lake City			
At: Salt Lake County General Hospital	Recent Advances in Clinical Electrocardiography	January 5-March 9, once weekly, part time	30.00
ENDOCRINOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Endocrinology	April 6-May 25, once weekly, part time	30.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Massachusetts General Hospital	Endocrine and Metabolic Disorders in Children and Adolescents	June 23-25, full time	50.00
At: New England Deaconess Hospital	Diabetes and Endocrinology in Relation to General Medicine	July, 3 days, full time	30.00
University of Michigan Medical School, Ann Arbor			
At: University Hospital	Metabolism and Endocrinology	March 29-April 2, full time	50.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Endocrinology	March 13, 12 weeks, part time	15.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16[1]			
At: Kings County Hospital	Metabolic Endocrinology	April, once weekly, 12 weeks part time	30.00
At: Jewish Hospital	Medical and Gynecologic Endocrinology	April, once weekly, 10 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Endocrinology	Spring, 2 weeks, full time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	549-A Endocrinology	April 12-June 4, part time	40.00
University of Buffalo School of Medicine, 24 High St., Buffalo, N. Y.	Endocrinology	May 19-20, full time	25.00
ENDOSCOPY			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Bronchoscopy	Arranged, 1 week, full time	100.00
	Clinical Bronchoscopy	March 24, 8 days, part time	150.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12	Bronchoesophagology	March or April, 2 weeks, full time	150.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Columbia Presbyterian Medical Center	Otolaryngology PM 1—Bronchoscopy	April 5-23, part time	250.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16[1]			
At: Greenpoint Hospital	Gastroscopy	April, once weekly, 6 weeks, part time	30.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Gastroscopy	Arranged, 2 weeks, part time	200.00
	Gastroscopy (Advanced)	Arranged, 20 hours, part time	200.00
New York Polyclinic Medical School and Hospital 345 W. 50th St., New York 19	Bronchoscopy	Arranged, 4 weeks, part time	150.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	595-A Endoscopy: Bronchoesophagology and Laryngology	January 18-22, full time	100.00
Temple University School of Medicine, 3400 N. Broad St., Philadelphia 40, Pa.	Bronchoesophagology	February 1-12, full time	250.00
University of Pennsylvania Graduate School of Medicine, Philadelphia 4	Bronchology, Esophagology, and Laryngeal Surgery	January and June, 2 weeks, full time	250.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	FRACTURES		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Intensive Course in Fractures and Traumatic Surgery	March 1 and June 14, 2 weeks, full time	$150.00
	Clinical Course in Fractures	Arranged, first of every week, 1 or 2 weeks, full time	50.00 per week
	Special Course in Fractures	March 24, 10 days, part time	125.00
John Gaston Hospital, 860 Madison Ave., Memphis, Tenn.	Management of Simple Fractures	April 7-9, full time	50.00
	GASTROENTEROLOGY		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Gastroenterology	May 17, 2 weeks, full time	100.00
	Advanced Course in Gastroscopy and Gastroenterology	Arranged, 1 week, full time	150.00
	Personal Course in Gastroscopy and Gastroenterology	Arranged, 2 weeks, full time	200.00
University of Michigan Medical School, Ann Arbor At: University Hospital	Diseases of the Gastro-Intestinal Tract	April 26-May 1, full time	50.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich. At: Receiving Hospital	Gastroenterology Clinic	Every quarter, 12 weeks, part time	15.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Montefiore Hospital	Medicine PM 73—Advanced Gastroenterology	January 19-May 11, part time	75.00
	Medicine PM 45—Intensive Course in Gastroenterology	April 5-9, full time	60.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16 [1] At: Jewish Hospital	Gastroenterology	April, 3 times weekly, 7 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Gastroenterology	Arranged, Spring, 1 month, full time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical Gastroenterology	Arranged, 6 weeks, part time	75.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5411-A Gastroenterology	April 14-June 2, part time	40.00
Queens County Medical Society Graduate Education Committee, 112-25 Queens Blvd., Forest Hills, N. Y.	Clinical Gastroenterology	January, 15 weeks, part time	25.00
Starlight Plan for Postgraduate Study, Wayne County, Starlight, Pa.	Gastroenterology	July and August, 5 days, part time	15.00 daily
University of Pennsylvania Graduate School of Medicine, Philadelphia 4 At: Children's Hospital	The Diagnosis and Management of Disorders of the Gastrointestinal Tract in Infancy and Childhood	June 1-3, full time	60.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25 At: Auditorium, M. D. Anderson Hospital	Gastroenterology	Jauuary 12-March 30, once weekly, part time	25.00
University of Utah, Division of Graduate and Postgraduate Medical Education, 175 E. 21st St. S., Salt Lake City At: Salt Lake County General Hospital	Gastroenterology	February 10-12, full time	30.00
	GERIATRICS		
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5426-B Geriatrics	January 27-29, full time	30.00
	HEMATOLOGY		
Florida State Board of Health, Department of Medicine, 1625 Riverside Ave., Jacksonville [94] At: Jacksonville	Seminar on Hematology	July 8-10, full time	25.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Hematology	June 14, 1 week, full time	100.00
University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12 [99]	Peripheral Blood and Bone Marrow Study	March 11-12, full time	25.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Advanced Hematology	March 8, 12 weeks, part time	50.00
	Beginning Hematology	March 13, 12 weeks, part time	50.00
	Blood	January 1-June 12, once weekly, part time	30.00
At: Receiving Hospital	Review of Clinical Hematology	January 1-March 13, once weekly, part time	15.00
	Hematology Clinic	January 1-March 13, once weekly, part time	15.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Mt. Sinai Hospital	Medicine PM 28—Laboratory Methods in Hematology	March 1-25, full time	200.00
	Medicine PM 67—Advanced Hematology	February 9, May 25, part time	75.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Hematology	Arranged, 2 months, part time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	546-B Clinical Hematology	April 13-June 3, part time	40.00
Albert Einstein Medical Center, Southern Division, 5th and Reed Sts., Philadelphia 47	Hematology	Spring, once weekly, 10 weeks, part time	75.00
University of Pennsylvania Graduate School of Medicine, Philadelphia 4 At: Bryn Mawr Hospital	Clinical and Laboratory Hematology	February and April, 6 weeks, full time	200.00
	HOSPITAL ADMINISTRATION		
Columbia University School of Public Health, 600 W. 168th St., New York 32	Master of Science in Hospital Administration [50]	September, 21 months, full time	1,045.00
	INDUSTRIAL MEDICINE		
Harvard University School of Public Health, 55 Shattuck St., Boston	Industrial Health	February 8-April 3, full time	225.00
University of Michigan School of Public Health, Ann Arbor	Industrial Health	February-May, full time	Varies
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: School of Public Health	Occupational Medicine 202. The Occupational Diseases	February 1-March 27, part time	25.00
	Occupational Medicine 203. Industrial Medical Organization	March 29-May 22, part time	25.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
INDUSTRIAL MEDICINE—Continued			
New York University Post-Graduate Medical School, 477 First Ave., New York 16	482-A Occupational Dermatoses	February 1-5, full time	$50.00
	483-A Industrial Medicine	May 10-15, full time	25.00
	484-A Medical Aspects of Compensation [58]	May 3-7, full time	25.00 [57]
University of Cincinnati College of Medicine, Institute of Industrial Health, Eden Ave., Cincinnati 19, Ohio			
At: Kettering Laboratory	Industrial Medicine	July 1, 12 months, full time	400.00
	Industrial Medicine	July 1, 3 years, full time	Stipend
University of Pittsburgh Graduate School of Public Health, Pittsburgh 13	Industrial Noise Problems	January and February, 8 sessions, once weekly, full time	25.00
	Pulmonary Dust Diseases	March and April, 8 sessions, once weekly, full time	25.00
INTERNAL MEDICINE			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Differential Diagnosis of Internal Diseases	January 5-March 30, once weekly, part time	50.00
	Varicose Veins	March 2-April 13, once weekly, part time	25.00
University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22	Diagnositic Exfoliative Cytology	February 8-19, full time	Not given
	Symposium on Heart and Lung	February 19-21, full time	Not given
	Photomicrography (Part II)	April 1-June 3, once weekly, part time	Not given
	Symposium on Emergencies: Medical, Surgical and Obstetrical	April 16-18, full time	Not given
	Internal Medicine [13]	June 14-18, full time	Not given
University of Southern California, School of Medicine, 1200 N. State St., Los Angeles 33	842 Recent Advances in Internal Medicine	Arranged, 6-12 weeks, part time	[100]
	843 Recent Advances in Diagnosis and Treatment	Arranged, 6-12 weeks, part time	[100]
American College of Chest Physicians, 112 E. Chestnut St., Chicago 11 [14]			
At: University of California Medical School, San Francisco	Practical Considerations in Diseases of the Heart and Lungs	February 19-21, full time	Not yet determined
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Intensive Course in Liver and Biliary Tract Diseases	June 7, 1 week, full time	100.00
	Intensive Course in Internal Medicine	May 3, 2 weeks, full time	125.00
Tulane University, Division of Graduate Medicine, 1430 Tulane Ave., New Orleans, La.	Internal Medicine for General Practitioners	March 22-27, full time	Not given
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Boston City Hospital	Internal Medicine 2	June 1-August 31, full time	375.00
At: Massachusetts General Hospital	Internal Medicine 3	June 21-July 31, full time	250.00
University of Michigan Medical School, Ann Arbor			
At: University Hospital	Clinical Internal Medicine	January 7-April 15, 14 days, part time	35.00
	Rheumatic Diseases	April 12-17, full time	50.00
	Diseases of Blood and Blood-Forming Organs	April 19-24, full time	50.00
	Recent Advances in Therapeutics	May 3-8, full time	25.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.			
At: Receiving Hospital	Medical Seminar	Every quarter, 12 weeks, part time	15.00
	Medical Conference	Every quarter, 12 weeks, part time	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Recent Advances in the Basic Sciences for Internists	February 15-17, full time	25.00
Clifton Springs Sanitarium and Clinic, Clifton Springs, N. Y. [9]	Recent Advances in Internal Medicine	February, 3 days, full time	None
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Montefiore Hospital	Medicine PM 72. Neoplastic Diseases	February 2-June 1, part time	150.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16 [1]			
At: Jewish Hospital	Internal Medicine	April, once weekly, 8 weeks, part time	20.00
	Hypertension and Nephritis	April, once weekly, 8 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Internal Medicine	Arranged, 1 month, full time	300.00
	Physical Diagnosis	Arranged, 40 hours, part time	100.00
	Applied Pharmacology and Therapeutics	Arranged, 20 hours, part time,	100.00
	Peripheral Vascular Disease	Arranged, 50 hours, part time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	General Practitioner's Course	Arranged, 4 weeks, full time	100.00
	General Medicine	Arranged, 4 weeks, full time	100.00
	Vascular Diseases	Arranged, part time	200.00
New York State Department of Health, Albany			
At: New York University-Bellevue Medical Center	Peripheral Vascular Disease	Spring, 5 days, full time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5427-B Auscultation of the Heart	February 1-3, full time	50.00
	5420-B Normal and Pathological Physiology	March 1-12, full time	100.00
	547-A Problems in Diagnosis	April 12-May 24, part time	35.00
	541-A Seminar in Internal Medicine	April 12-June 4 full time	250.00
	5413-A Peripheral Vascular Diseases	April 13-June 1, part time	40.00
	544-A Arthritis and Allied Rheumatic Disorders	April 13-June 1, part time	50.00
	545-A Normal and Pathological Physiology: Functional and Chemical Aspects	April 14-June 2, part time	40.00
	5410-A Diseases of the Liver and Biliary Tract	April 14-June 2, part time	35.00
	5412-A Nephritis and Hypertension	April 16-June 4, part time	30.00
	5418-B Peripheral Vascular Diseases	June 7-11, full time	50.00
	5419-A Symposium on Modern Therapeutics in Internal Medicine [60]	June 14-25, full time	[59]
University of North Carolina School of Medicine, Extension Division, P. O. Box 1020, Chapel Hill			
At: Wilson	Postgraduate Course in Medicine	January 12, 19, and 26, February 2, 16, and 23, 6 weeks, part time	20.00
At: Rowan Memorial Hospital, Salisbury	Clinical Seminars	January 13, February 10, March 10, April 14, May 12, 1 day, full time	Not given
At: Roanoke-Chowan Hospital, Ahoskie; Chowan Hospital, Edenton; Virginia Dare Hotel, Elizabeth City	Postgraduate Course in Medicine	Ahoskie—January 13, February 3; Edenton—January 20, February 17; Elizabeth City—January 27, February 24, 6 weeks, part time	20.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
INTERNAL MEDICINE—Continued			
University of Pennsylvania Graduate School of Medicine, Philadelphia 4	Applied Aspects of Calcium and Phosphorus Metabolism	May 24-25, full time	$40.00
	Surgical Problems in General Practice	March 16-18, full time	60.00
At: Graduate Hospital and Private Offices	Pain Syndromes: Diagnosis and Treatment by Regional Block	January-May, 3 weeks, full time	200.00
Starlight Plan for Postgraduate Study, Wayne County, Starlight, Pa.	Hypertension—Nephritis	July and August, 5 days, part time	15.00 daily
University of Texas, The Postgraduate School of Medicine, Galveston [15]			
At: Southwestern Medical School of The University of Texas	Systemic Mycoses	January 18-20, full time	35.00
University of Texas Postgraduate School of Medicine, Temple 44	Medical and Surgical Conference	March 1-3, full time	15.00
University of Utah, Division of Graduate and Postgraduate Medical ducation, 175 E. 21st St. S., Salt Lake City			
At: Salt Lake County General Hospital	Disorders of the Peripheral Circulation	March 4-6, full time	30.00
Mary Fletcher Hospital, Burlington, Vt.	Internal Medicine [61]	Time and length of course by arrangement	None
University of Washington School of Medicine, Seattle 5 [4]	Fluid and Electrolyte Balance	June, 2½ days, full time	Undetermined
University of Wisconsin School of Medicine, 418 N. Randall Ave., Madison	Continuation Course	Arranged, one month, full time	100.00
MALIGNANT DISEASE			
Connecticut State Medical Society, 160 St. Ronan St., New Haven	Cancer Teaching Day	March, full time	None
At: Hotel Taft	Annual Symposium on Malignancy	April 7, full time	None
Indiana University School of Medicine, Indianapolis			
Wayne University College of Medicine, 1512 St. Antoine St., Detroit, Mich.	Cancer Detection	Every quarter, 12 weeks, part time	25.00
At: Yates Clinic	Cancer Detection for General Physicians	February 10-11, full time	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14			
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32 [16]	Cancer PM 1. Cancer Diagnosis and Treatment	April 19-May 1, full time	100.00
At: Columbia Presbyterian Medical Center	Exfoliative Cytology (Cytologic Diagnosis of Cancer)	March 1-28, full time	300.00
Cornell University Medical College, 1300 York Ave., New York 21			
New York State Department of Health, Albany [17]	Cancer Diagnosis and Treatment	March 8-12, full time	[63]
At: Sloan-Kettering Division, Cornell Medical College	Cancer PM 1. Cancer Diagnosis and Treatment	April 19-May 1, full time	[63]
At: College of Physicians and Surgeons, Columbia University	Cancer Diagnosis and Treatment	March 8-12, full time	60.00
At: Memorial Center for Cancer and Allied Diseases, New York City [18]			
Mellon Institute, Fifth and Bellefield Ave., Pittsburgh 13, Pa.[19]	Postgraduate Seminar on Cancer	April, 2 days, part time	5.00
University of Puerto Rico School of Medicine, San Juan [20]			
At: Throughout the Island	Cancer	Arranged, 10 hours, part time	None
Medical College of South Carolina, Charleston [21]	Refresher Course in Cancer	March, 1½ days, full time	None
Tennessee State Medical Association, 4 S. Dunlap St., Memphis [22]			
At: Five teaching centers in eastern section of Tennessee	Cancer	Spring, 5 days, full time	None
University of Texas Postgraduate School of Medicine, 1400 Outer Belt Dr., Houston			
At: Anderson Hospital for Cancer Research	Eighth Annual Symposium on Fundamental Cancer Research	Spring, 2 days, full time	Not given
University of Vermont College of Medicine, Burlington [23]	Cancer Symposium	April, 2 days, full time	None
MEDICINE, GENERAL			
Alabama Academy of General Practice, 17 Moulton St., Montgomery	Eighth Postgraduate Seminar	January 26, full time	None
At: Medical College of Alabama, Birmingham	Postgraduate Seminars	Quarterly	None
Black Belt Postgraduate Seminar, Selma, Ala.[24]	Postgraduate Seminars	Bi-monthly	None
Central Alabama Postgraduate Medical Assembly, Montgomery [24]			
Marion County Medical Association, Winfield, Ala.[24]	Postgraduate Seminars	Quarterly	None
Medical College of Alabama, 620 S. 20th St., Birmingham	Postgraduate Assembly	January, 2 days, full time	None
Tuskegee Institute, Tuskegee Institute, Ala.			
At: John A. Andrew Memorial Hospital	John A. Andrew Clinical Society	April, 6 days, part time	10.00
Arizona Medical Association, 541 Security Bldg., Phoenix, Ariz.[25]			
At: Yuma, Douglas, Safford, and Florence	Seminars for Practicing Physicians	February, 1 day, full time	None
California Medical Association, 1036 N. Center St., Stockton			
At: Santa Rosa	North Coast Counties, Medical and Surgical Institute	February 11-12, full time	10.00
At: Fresno	San Joaquin Valley Counties, Medical and Surgical Institute	March 4-5, full time	10.00
At: Cottage Hospital, Santa Barbara	West Coast Counties, Medical and Surgical Institute	March 18-19, full time	10.00
At: Tuesday Club, Sacramento	Sacramento Valley Counties, Medical and Surgical Institute	April 1-2, full time	10.00
At: Hotel, Palm Springs	Southern Counties, Medical and Surgical Institute	April 22-23, full time	10.00
At: Regular Meetings of County Societies	Postgraduate Lectures	Monthly, part time	None
Mercy Hospital, Hillcrest Dr., San Diego 3, Calif.[26]	Recent Advances in Medicine and Surgery	March, once weekly, part time	None
San Diego Academy of Medicine, 2409 4th Ave., San Diego, Calif.			
At: El Cortez Hotel	Scientific Meetings—Postgraduate in Nature	6 to 8 times yearly, 4 hours, part time	Dues only
San Diego County General Hospital, Front and Dickerson Sts., San Diego, Calif.	Postgraduate Assembly	September, full time	None
University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22	Course for General Practitioners	March 8-12, full time	Not given
Colorado State Medical Society, 835 Republic Bldg., Denver			
At: Shirley Savoy Hotel	Midwinter Postgraduate Clinics [64]	February 16-19, full time	5.00
University of Colorado Medical Center, Office of Graduate and Postgraduate Medical Education, 4200 E. Ninth Ave., Denver	Colorado Medical Alumni Clinics [27]	June 4, full time	None
	Fifth Annual Intern and Resident Clinics	June 10-11, full time	None
At: Weld County Hospital, Greeley [28]	Fourth Annual Spring Clinics	May 7, 14, 21, 28, part time	None
Florida State Board of Health, Department of Medicine, 1625 Riverside Ave., Jacksonville [94]			
At: Hotel George Washington, Jacksonville	22d Annual Graduate Short Course	July 12-16, full time	10.00
At: Gainesville	Seminar on Medicine and Surgery	January 27, full time	None

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Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
Mount Sinai Hospital of Greater Miami, 4300 Alton Rd., Miami, Fla.	1954 Fourth Annual Postgraduate Medical Seminar	May 21-23, full time	$20.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Personal Course in General Medicine	March 24, 10 days, part time	100.00
	Course in Medical Emergencies, Diagnosis and Treatment	March 24, 10 days, part time	100.00
Illinois Academy of General Practice, 14 E. Jackson Blvd., Chicago 4 At: Alton, Belleville, Chicago, Danville, Decatur, Effingham, Elmhurst, Geneva, Joliet, Moline, Peoria, Herrin and Rockford	Medicine for Today	April 13-May 21, once weekly, part time	40.00
Vanderburgh County Medical Society, Committee on Postgraduate Education, 201 S. E. Third St., Evansville, Ind.	Tri-State Postgraduate Medical Assembly	Spring, 1 day, full time	None
New Orleans Graduate Medical Assembly, Room 103, 1430 Tulane Ave., New Orleans 12, La.	Graduate Medical Assembly	March 8-11, full time	20.00
Baltimore City Medical Society, 1211 Cathedral St., Baltimore, Md. At: University of Maryland and The Johns Hopkins Hospital	Postgraduate Courses	January-April, 8 hours monthly, part time	None
Postgraduate Medical Institute, 22 The Fenway, Boston, Mass.[29] At: Burbank Hospital, Fitchburg	Postgraduate Courses	January 6, February 10, March 17, part time	10.00
At: Children's Medical Center and Boston Lying-In Hospital	General Medicine	January 6, 13, 20, and 27, February 3, 10, 17, and 24, March 3, 10, 17, 24, and 31, April 14, part time	75.00
At: Marlboro, Framingham, Union, Leonard Morse at Natick, and Milford Hospitals	General Medicine	January 13, February 17, March 17, April 14, and May 12, part time	25.00
At: Truesdale, St. Anne's, and Union Hospitals, Fall River	General Medicine	March 10, 17, 24 and 31, April 14	30.00
University of Michigan Medical School, Ann Arbor[30] At: Alpena, Bay City, Cadillac, Flint, Jackson, Lansing, Mt. Clemens, Muskegon, Battle Creek, Traverse City Upper Peninsula: Escanaba, Houghton, Iron Mountain, Ironwood, Marquette, Menominee, Sault Ste. Marie	Michigan Program for Graduates in Medicine	April-May, one day, full time	None
University of Minnesota Center for Continuation Study, Minneapolis 14	Forensic Medicine	March 8-10, full time	25.00
American Academy of General Practice, 406 W. 34th St., Kansas City, Missouri At: Public Auditorium, Cleveland, Ohio	Sixth Annual Scientific Assembly	March 22-25, full time	5.00[65]
Homer G. Phillips Alumni Association, 2601 N. Whittier St., St. Louis, Mo. At: Homer G. Phillips Hospital	Post Graduate Clinical Conference	April 26-30, full time	20.00
Creighton University School of Medicine, 306 N. 14th St., Omaha 2[27]	Spring Medical Assembly	April, 2½ days, full time	5.00-10.00
Atlantic City Hospital, 26 S. Ohio Ave., Atlantic City, N. J.	Visiting Chief Program	Arranged, 5 days, part time	None
Duke Hospital, Durham, N. C.	Medical Postgraduate Course	Arranged, 4 days, full time	25.00
Tri-State Medical Association, 122 S. Greene St., Greensboro, N. C.[31]	Medical Assembly	February 2-3, full time	None
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati 19 At: Hotel Alms	Seminar Series for General Physicians	February 7 and March 14, part time	[105]
Jefferson Medical College and Hospital, 1025 Walnut St., Philadelphia 7[27]	The Jefferson Graduate Assembly	February 3-5, full time	10.00
Philadelphia County Medical Society, 301 S. 21st St., Philadelphia 3 At: Bellevue-Stratford Hotel	Postgraduate Institute	March 30-April 2, full time	10.00 non-members
Anderson County Medical Society, Anderson, S. C. At: The Clemson House, Clemson, S. C.	Piedmont Postgraduate Clinical Assembly	September 15-16	7.50
Tennessee State Medical Association, Committee on Postgraduate Instruction, University Center, Memphis[32] At: In more than 40 teaching centers throughout state	Postgraduate Course	Every 2 years, 10 lectures in each teaching center	20.00
International Medical Assembly of Southwest Texas, P. O. Box 2445, San Antonio At: Municipal Auditorium	International Medical Assembly of Southwest Texas	January 26-28, full time	20.00
Postgraduate Medical Assembly of South Texas, 229 Medical Arts Bldg., Houston At: The Shamrock Hotel	Postgraduate Medical Assembly of South Texas	July 19-21, full time	20.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25 At: Shannon West Texas Memorial Hospital, San Angelo	Shannon Clinical Seminars	January-May, once weekly, part time	20.00
University of Utah, Division of Graduate and Postgraduate Medical Education, 175 E. 21st St. S., Salt Lake City At: Salt Lake County General Hospital	General Practice	March 15-19, full time	50.00
Utah Academy of General Practice, 3007 Highland Dr., Salt Lake City At: University of Utah College of Medicine	Postgraduate Course in General Practice	March 15-19, full time	50.00
Vermont State Medical Society, 128 Merchants Row, Rutland At: Mary Fletcher and DeGoesbriand Hospitals	May Clinical Meeting[66]	May, 1 day, full time	None
University of Washington School of Medicine, Seattle 33,[34]	General Practice Clinic Day	April 2, full time	None
	MILITARY MEDICINE		
Army Medical Service Graduate School, Washington 12, D. C. At: Walter Reed Army Medical Center	Recent Advances in Medicine and Surgery[67,68,69]	April 19-30, full time	None
	NATIONAL DEFENSE		
Army Medical Service Graduate School, Washington 12, D. C. At: Walter Reed Army Medical Center	Symposium on Physical and Mental Health Standards[67,68,69,71]	April 16-17, full time	None
	NEUROLOGICAL SURGERY		
New York University Post-Graduate Medical School, 477 First Ave., New York 16	552-A Diagnosis and Treatment of Peripheral Nerve Injuries	January 11-15, full time	90.00
	553-A Trauma of Central Nervous System	June 14-19, full time	75.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	NEUROLOGY AND PSYCHIATRY		
Institute for Psychoanalytic Medicine of Southern California, 226 N. Conon Dr., Beverly Hills, Calif.	Psychoanalysis [74,75]	Arranged, weekly, part time	$40.00
	Seminars in Psychoanalytic Medicine [76]	Arranged, 8 sessions, part time	40.00
	Psychological Problems in Obstetrics [76]	Arranged, 8 sessions, part time	40.00
Los Angeles Institute for Psychoanalysis, 334 N. Bedford Dr., Beverly Hills	Psychoanalysis [74,75]	Arranged, weekly, part time	10.00-30.00
	Seminar for Pediatricians [76]	Arranged, weekly, 6 weeks	15.00
Los Angeles Psychoanalysis Society, 344 N. Bedford Dr., Beverly Hills, Calif.	Professional Training in Psychoanalysis [72]	Arranged, part time	232.00
San Francisco Psychoanalytic Institute, 2355 Post St., San Francisco 15	Psychoanalysis [74,75]	Arranged, weekly, part time	150.00
Yale University School of Medicine, 333 Cedar St., New Haven, Conn.[85]	Connecticut Postgraduate Seminar in Psychiatry and Neurology—Child Psychiatry	March 8-April 12, 6 days, part time	Not stated
	Connecticut Postgraduate Seminar in Psychiatry and Neurology—Neurology	April 26-May 10, 3 days, part time	Not stated
At: Southbury Training School	Connecticut Postgraduate Seminar in Psychiatry and Neurology—Pediatric Psychiatry	April 19, part time	Not stated
At: Connecticut State Hospital	Postgraduate Seminar in Psychiatry and Neurology—Basic Psychiatry	January 4, March 1, 9 days, part time	Not stated
The Catholic University of America, Washington, D. C.	Psychodynamics I	February, 15 weeks, full time	40.00 [73]
	Child Psychiatry II	February, 15 weeks, part time	40.00 [73]
Washington Psychoanalytic Institute, 1835 Eye St., N. W., Washington, D. C.	Psychoanalysis [74,75]	Arranged, weekly, part time	30.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]			
At: Grady Memorial Hospital	Psychosomatic Medicine	February 4, full time	5.00
Chicago Institute for Psychoanalysis, 664 N. Michigan Ave., Chicago 11	Psychoanalysis [74,75]	Arranged, weekly to bi-weekly, part time	550.00
	Psychosomatic Case Demonstration [76]	Arranged, weekly, part time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Personal Course in Clinical Neurology	March 24, 10 days, part time	100.00
	Personal Course in Neuropathology	Arranged	20.00 per hour
Topeka Institute for Psychoanalysis, 3617 W. 6th Ave., Topeka, Kan.	Psychoanalysis [74,75]	Arranged, weekly, part time	100.00
	Psychoanalysis and Its Contribution to the Understanding of Psychosis [76]	January-April, weekly, part time	36.00
	Special Problems in Child Analysis [76]	April-July, weekly, part time	36.00
	General Psychopathology [76]	January to May, 25 sessions, part time	75.00
	Psychiatry and Anthropology [76]	March 16-April 15, 10 sessions, part time	30.00
New Orleans Psychoanalytic Study Group, 3706 Prytania St., New Orleans 15, La.	Psychoanalysis [74,75]	Arranged, bi-weekly, part time	615.00
Baltimore Psychoanalytic Institute, 11 E. Chase St., Baltimore 2, Md.	Psychoanalysis [74,75]	Arranged, weekly to bi-weekly, part time	30.00-75.00
Boston Psychoanalytic Institute, 82 Marlborough St., Boston 6, Mass.	Psychoanalysis [74,75]	Arranged, weekly to bi-weekly, part time	325.00
Detroit Psychoanalytic Institute, 1130 Parker Ave., Detroit, Mich.	Psychoanalysis [74,75]	Arranged, weekly to bi-weekly, part time	2.50 per class hour
University of Michigan Medical School, Ann Arbor			
At: University Hospital	Clinical Neurology	March 8-10, full time	25.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Neurology for General Physicians and Specialists	January 25-30, full time	40.00
	Child Psychiatry for General Physicians and Specialists	February 1-5, full time	40.00
American Institute for Psychoanalysis, 220 W. 98th St., New York 25	Continuous Case Seminar [81]	February 1, 15 weeks, full time	60.00
	The Practice of Group Psychoanalysis	February 2, 10 weeks, full time	30.00
	The Psychoanalytic Relationship [81]	February 4, 15 weeks, full time	60.00
	Clinical Conferences [81]	February 5, 10 weeks, full time	40.00
	Clinical Conferences on Case Histories I	February 9, 15 weeks, full time	45.00
	Psychiatry and Psychoanalysis	February 19, 15 weeks, full time	45.00
At: New School for Social Research	Psychoanalysis and Psychosomatic Medicine	February 1, 15 weeks, full time	21.00
	Pioneers in Psychoanalytic Thinking	February 2, 15 weeks, full time	21.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Columbia Presbyterian Medical Center	Neurology PM 2 Clinical Electroencephalography and Electromyography	January 2, 3 months, full time	250.00
At: Mt. Sinai Hospital	Neurology PM 30 Clinical Neurology	March 29-April 2, full time	60.00
At: Montefiore Hospital	Neurology PM 61 Advanced Neurology	Arranged, 3 months, full time	150.00
Columbia University, Psychoanalytic Clinic, 630 W. 168th St., New York 32	Psychoanalysis [74,75]	Full time	870.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16 [1]			
At: Jewish Hospital	Child Psychiatry	April, once weekly, 10 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 20 E. 106th St., New York 29	Comprehensive Course in Psychoanalysis	January-April 23, part time	Varies
New York Psychoanalytic Institute, 247 E. 82d St., New York 28	Psychoanalysis 1, 2	Arranged, weekly, evenings, part time	375.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	643-A Treatment Methods in Psychiatry	January 11-March 6, part time	250.00
Postgraduate Center for Psychotherapy, 218 E. 70th St., New York 21	Seminar for Physicians (710)	January 5 and February 2, part time	None
	The Handling of Special Problems in Therapy (719)	January 22, 5 weeks, part time	15.00
	Principles of Diagnosis and Treatment in Children (813)	February 15, 4 weeks, part time	10.00
	Dynamics and Treatment of Marital Problems (814)	February 17, 5 weeks, part time	10.00
	Principles of Group Psychotherapy (401)	February 15, 12 weeks, part time	30.00
	Readings in Psychiatry and Allied Fields (405)	February 15, 15 weeks, part time	30.00
	The Development of Psychoanalytic Thinking (203)	February 17, 15 weeks, part time	40.00
	Adjunctive Measures in Psychotherapy (829)	February 18, 8 weeks, part time	15.00

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Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NEUROLOGY AND PSYCHIATRY—Continued			
Postgraduate Center for Psychotherapy, 218 E. 70th St., New York 21	Clinical Psychiatry and Diagnosis (216)	February 18, 15 weeks, part time	$40.00
	Clinical Conferences: Character Disorders (217)	February 19, 10 weeks, part time	30.00
	Continuous Case Seminar (804)	February 19, 15 weeks, part time	40.00
	Psychopathology and Treatment of Wayward Youth (825)	March 25, 5 weeks, part time	10.00
Psychoanalytic Institute of the State University Medical Center at New York, 606 Winthrop St., Brooklyn 3	Psychoanalysis [74,75]	Arranged, weekly, part time	525.00
William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology, 12 E. 86th St., New York 28	The Meaning of Culture	January-June, once weekly, part time	30.00
	Introduction to Philosophy	January-June, once weekly, part time	30.00
	Literature of Psychoanalysis, Part I	January-June, once weekly, part time	35.00
	Behavior and Brain Function	February-April, once weekly, part time	25.00
	Seminar on Psychoanalytic Orientation for Physicians	February-June, once weekly, part time	40.00
	Master Trends in Modern Society	February-June, once weekly, part time	30.00
	Comprehensive Course in Psychoanalysis for Psychiatrists	September 1954, 4-6 years, part time	750.00
Institute of the Philadelphia Association for Psychoanalysis, 111 N. 40th St., Philadelphia, Pa.	Psychoanalysis [74,75]	Arranged, bi-weekly, part time	435.00
	Application of Psychoanalysis to Psychiatry [77]	Arranged, bi-weekly, part time	425.00
	Application of Psychoanalytic Knowledge to Professional Disciplines Other Than Psychiatry [78]	Arranged, bi-weekly, part time	Arranged
Philadelphia Psychoanalytic Institute, Medical Tower, Suite 2908, 255 S. 17th St., Philadelphia 3	Psychoanalysis [74,75]	Arranged, bi-weekly, part time	250.00
	Educative Analysis [79]	Arranged, weekly, part time	275.00
	Psychodynamic Principles in Psychosomatic Medicine [80]	Arranged, 8 sessions, part time	10.00
Medical College of South Carolina, 16 Lucas St., Charleston [36]	Institute on Neurology and Psychiatry	April, 1 day, full time	None
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25, Texas			
At: Auditorium, Robert B. Green Hospital, San Antonio	Clinical Psychiatry	February 3, 6 weeks, part time	25.00
Seattle Training Center, 4033 E. Madison St., Seattle 2, Wash.	Psychoanalysis [74,75]	Arranged, weekly to bi-weekly, part time	35.00
University of Washington School of Medicine, Seattle 5 [4]	Practical Psychiatry	January 13-March 31, part time	40.00
OBSTETRICS AND GYNECOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Management of Infertility	January 7-March 4, once weekly, part time	20.00
	Gynecology	March 24-May 26, once weekly, part time	30.00
Los Angeles Graduate School of Medicine, 1858 W. Washington Blvd., Los Angeles 7	Gynecology	Once weekly, 12 weeks, full time	60.00
Los Angeles Obstetrical and Gynecological Society, Los Angeles, Calif.			
At: Elks Club	Los Angeles Obstetrical and Gynecological Forum [82]	February 13-14, full time	20.00
Obstetrical and Gynecological Assembly of Southern California, 1930 Wilshire Blvd., Los Angeles 57			
At: Ambassador Hotel	Graduate Assembly	February 15-19, full time	85.00
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33	866 Recent Advances in Obstetrics, Gynecology and Pediatrics	Arranged, 6-12 weeks, part time	100
University of Colorado Medical Center, Office of Graduate and Postgraduate Medical Education, 4200 E. Ninth Ave., Denver 20	Postgraduate Course in Obstetrics and Gynecology	April 9-10, full time	10.05
George Washington University School of Medicine, 1335 H St., Washington 5			
At: George Washington University Hospital	Gynecology	March 1-5, full time	75.00
Grady Memorial Hospital, 36 Butler St., S. E., Atlanta, Ga.	Obstetrics [83]	Arranged, 6 months, full time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, Ill.	Vaginal Approach to Pelvic Surgery	March 1, March 29, May 3, June 7, 20 hours, full time	100.00
	Intensive Course in Gynecology	February 15, March 15, April 19, June 14, 2 weeks, full time	150.00
	Intensive Course in Obstetrics	March 1, March 29, June 7, 2 weeks, full time	150.00
	Personal Course in Office Gynecology	January 6, March 31, May 12, 4 days, part time	100.00
	Personal Course in Gynecologic Surgery	January 6, March 31, May 12, 5 days, part time	100.00
	Personal Course in General and Office Obstetrics	April 14, 4 days, part time	100.00
	Personal Course in Surgical Obstetrics	January 6, June 23, 4 days, part time	100.00
State University of Iowa College of Medicine, Iowa City [37]	Obstetrics and Gynecology	March or April, 1½ days, full time	10.00
Johns Hopkins University School of Medicine, 710 N. Washington St., Baltimore	Gynecological Pathology	February 1, 8 weeks, full time	150.00
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1			
At: University Hospital	Gynecology, Oncology and Female Urology [84]	Time arranged, 10 weeks, full time	125.00
	Gynecology and Obstetrics [84]	Arranged, 12 weeks, full time	150.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Free Hospital for Women	Pathology of Obstetrics and Gynecology	January 7-May 13, part time	150.00
	Gynecology 2	June, July, August, September, 1 month, full time	150.00
At: Boston Lying-in Hospital	Clinical Obstetrics	April and May, 1 month, full time	150.00
University of Michigan Medical School, Ann Arbor			
At: Maternity Hospital	Obstetrics	January 20-23, full time	50.00
	Gynecology	February 24-27, full time	50.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Conference on Sterility and Fertility for General Physicians and Specialists	February 18-20, full time	25.00
Seton Hall University School of Education, 31 Clinton St., Newark 2, N. J.[101]			
At: Seton Hall Campus, South Orange	Gynecological Pathology	February 13, once weekly, part time	100.00
	Gynecology	February 20, once weekly, part time	100.00

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Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY—Continued			
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Margaret Hague Maternity Hospital, Jersey City, N. J.	Obstetrics PM 81 Observation Course	One month, first of each month, full time	$100.00
	Obstetrics PM 80 Internship Training	Three months, first of each month, full time	350.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Gynecology and Obstetrics Including Manikin Obstetrics and Operative Gynecology (Cadaver)	April, 2 months, full time	250.00
	Clinical Course in Office and General Obstetrics	Arranged, 4 weeks, part time	100.00
	Clinical Gynecology	Arranged, 6 weeks, part time	75.00
	Manikin Obstetrics	Arranged, 6 weeks, part time	100.00
	Clinical and Operative (Cadaver) Gynecology	Arranged, 6 weeks, part time	175.00
	Culdoscopy	Arranged, 6 sessions, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	569-B Surgical Anatomy as Applied to Gynecology	February 23-March 20, part time	175.00
	563-A Technique of Gynecological Examination	March 22-April 23, part time	75.00
	567-B Gynecological Endocrinology	April 27-June 19, part time	125.00
	568-B Gynecological Cytology (for Specialists)	April 27-June 17, part time	100.00
At: Beth Israel Hospital	734-B Gynecology (for Specialists)	February 1-May 21, part time	250.00
University of Buffalo School of Medicine, 24 High St., Buffalo, N. Y.	Obstetrics and Gynecology	February 10-11, full time	25.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City	Obstetrics-Gynecology	January 16, full time	5.00
Tennessee State Medical Association, 4 S. Dunlap St., Memphis [32]			
At: Fifteen teaching centers in middle and east Tennessee	Circuit Courses in Obstetrics	Continuously, 10 weeks, full time	20.00
University of Texas Postgraduate School of Medicine, Temple			
At: Scott and White Memorial Hospital; Scott, Sherwood, and Brindley Foundation	Obstetrics	Arranged, 2 weeks, full time	25.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25			
At: M. D. Anderson Hospital for Cancer Research and St. Joseph's Hospital	Wet Clinics in Gynecology	January 8-March 12, once weekly, part time	80.00
University of Washington School of Medicine, Seattle 5 [4]	Obstetrics and Gynecology	April 7-9, full time	30.00
OPHTHALMOLOGY AND OTOLARYNGOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Otolaryngology	February 9-March 30, once weekly, part time	30.00
	Histology and Histopathology of the Eye	March 3-June 9, once weekly, part time	60.00
Research Study Club of Los Angeles, 727 W. Seventh St., Los Angeles, Calif.			
At: Elk's Club	Twenty-Third Annual Mid-Winter Postgraduate Clinical Convention	January 18-29, full time	100.00
University of California School of Medicine, Los Angeles			
At: Campus and San Diego	Office Otolaryngology	April 28, full time	17.50
University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22 [38]	Didactic Resident Course in Ophthalmology	January-May, full time	Not given
Chicago Ophthalmological Society, 8 W. Oak St., Chicago 10	Clinical Conference	February 5-6, full time	35.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Clinical Course in Otolaryngology	Arranged, first of every week, 2 weeks, full time	50.00
	Clinical Course in Ophthalmology	Arranged, first of every week, 2 weeks, full time	50.00
Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11	Audiology for Practicing Otologists	May 3-8, full time	100.00
	Diagnosis and Treatment of Ocular Muscle Anomalies	September, 1 week, full time; 2 weeks, part time	100.00 150.00
University of Illinois College of Medicine, 1853 W. Polk St., Chicago 12			
At: Illinois Eye and Ear Infirmary	Postgraduate Course in Ophthalmology [85]	July 1, December 1, 6 months, full time	500.00
State University of Iowa College of Medicine, Iowa City	Ophthalmology Conference	Arranged, monthly, 1 day, full time	None
University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12	Postgraduate Course in Ophthalmology and Otolaryngology [99]	April 5-9, full time	40.00
	Temporal Bone Surgery	June 25-28, full time	75.00
Harvard Medical School, 25 Shattuck St., Boston [39]	Basic Sciences in Ophthalmology	January 1-February 28, full time	150.00 per month
Ophthalmic Study Council, 243 Charles St., Boston			
At: Colby College, Waterville, Maine	Lancaster Courses in Ophthalmology [86]	June, 11 weeks, full time	325.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Harvard Medical School and Massachusetts Eye and Ear Infirmary	Clinical Ophthalmology and Ocular Pathology	January 4-30, full time	150.00
	Audiology	February 1-13, full time	125.00
	Fundamentals in Refraction and Ocular Motility	February 1-27, full time	150.00
	Anatomy of the Temporal Bone	February 15-March 27, full time	300.00
University of Michigan Medical School, Ann Arbor	Ophthalmology	April 19-21, full time	50.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Eye, Ear, Nose, and Throat for General Physicians	April 5-7, full time	25.00
	Otolaryngology for Specialists	June 21-26, full time	40.00
Hansel Foundation, 1229 Missouri Theatre Bldg., St. Louis 3			
At: Sheraton Hotel	Allergy in Otolaryngology	June 7-11, full time	150.00
American Academy of Plastic Surgery for Head and Neck, 307 Second Ave., New York 3			
At: Manhattan General Hospital	Otolaryngologic Plastic Surgery	September, 3 weeks, full time	250.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Mt. Sinai Hospital	Ophthalmology PM 43 Symposium in Ophthalmology	April 26-May 1, full time	125.00
	Otorhinology PM 31 (Rhinoplasty, Reconstructive Surgery of the Nasal Septum, and Otoplasty)	July 17-31, full time	250.00
At: Montefiore Hospital	Ophthalmology PM 60 Elementary Ophthalmoscopy	January 4-March 1, part time	30.00
	Ophthalmology PM 61 Perimetry	April 5-May 17, part time	30.00

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Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OPHTHALMOLOGY AND OTOLARYNGOLOGY—Continued			
New York Eye and Ear Infirmary, 218 Second Ave., New York	External Diseases of the Eye	Arranged, 4 weeks, part time	$75.00
	Histo-Pathology of the Eye	May or June, 6 days, full time	100.00
	Physiological Optics in Clinical Practice	Arranged, 6 weeks, part time	100.00
	Plastic Eye Surgery	Arranged, 4 weeks, part time	150.00
	Anomalies of Extraocular Muscles	Arranged, 4 weeks, part time	75.00
	Slit Lamp Microscopy	Arranged, 4 weeks, part time	100.00
	Ophthalmoscopy	Arranged, 4 weeks, full time	75.00
	Glaucoma	Arranged, 8 weeks, full time	75.00
	Resuscitation	Arranged, 1 day, full time	50.00
	Operative Eye Surgery	Arranged, 4 weeks, part time	150.00
	Refraction	Arranged, 8 weeks, part time	100.00
	Perimetry	Arranged, 4 weeks, part time	75.00
	Neuro-Ophthalmology	Arranged, 4 weeks, part time	75.00
	Broncho-Esophagology and Laryngeal Surgery	Arranged, 12 days, part time	250.00
	Rehabilitation of the Hard of Hearing	Arranged, 4 days, full time	75.00
	The Conservative Management of Acute Sinusitis and Chronic Rhinitis	Arranged, 6 days, part time	75.00
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati 19	Graduate Convention in Otology, Rhinology and Laryngology	April 12-17, full time	140.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Seminar in Ophthalmology and Otolaryngology	Arranged, 5 days, full time	50.00
	Advanced Otology	Arranged, 2 weeks, part time	250.00
	Refraction	Arranged, 4 weeks, part time	100.00
	Motor Anomalies	Arranged, 4 weeks, part time	50.00
	Operative Ophthalmology (Dissection)	Arranged, 4 weeks, part time	100.00
	Operative Otology (Cadaver)	Arranged, 4 weeks, part time	100.00
	Surgical Anatomy of Nose and Accessory Sinuses	Arranged, 6 weeks, part time	150.00
	Clinical Ophthalmology	Arranged, 6 weeks, or 3 months, part time	75.00-125.00
	Clinical Otolaryngology	Arranged, 6 weeks, or 3 months, part time	100.00-150.00
	Clinical Ophthalmology and Otolaryngology	Arranged, 6 weeks, or 3 months, full time	150.00-250.00
	Operative Nose and Throat (Dissection)	Arranged, 6 weeks, part time	150.00
	Ophthalmology, Including Cadaver Ophthalmology and Refraction	Arranged, 3 months, part time	300.00
	Otolaryngology and Ophthalmology, Including Cadaver and Refraction	January and April, 3 months, full time	600.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5910-A Laryngology and Surgery of the Larynx and Neck	January 4-15, full time	200.00
	579-A Neuro-Ophthalmology	January 18-22, part time	50.00
	5710-A Perimetry	January 18-22, part time	50.00
	594-B Endaural Surgery	February 8-19, full time	200.00
	571-A Motor Anomalies of the Eye (Part I) for Specialists	March 8-13, full time	90.00
	572-A Motor Anomalies of the Eye (Part II) for Specialists	March 15-19, full time	75.00
	573-A Ophthalmic Plastic Surgery (for Specialists)	March 29-April 2, part time	75.00
	574-B Surgery of the Eye (for Specialists)	March 22-27, full time	100.00
	5711-B Ophthalmoscopy	May 3-7, part time	50.00
	5713-B Ocular Therapeutics	May 3-7, part time	50.00
University of Cincinnati College of Medicine, Eden and Bethesda Aves., Cincinnati	Eighteenth Annual Graduate Convention in Otology, Rhinology, and Laryngology	April 12, 6 days, full time	150.00
University of Oregon Medical School, 3181 S. W. Sam Jackson Park Rd., Portland	Oregon Academy of Ophthalmology and Otolaryngology—Postgraduate Convention	March, one week, full time	75.00
Temple University School of Medicine, 3400 N. Broad St., Philadelphia 40	Laryngology and Laryngeal Surgery	January 11-22, full time	250.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25	Ocular Motor Anomalies	February 1-March 1, twice weekly, part time	25.00
Gill Memorial Hospital, 711 S. Jefferson St., Roanoke, Va.	27th Annual Spring Congress in Ophthalmology and Otolaryngology	April 5-10, full time	75.00
ORTHOPEDIC SURGERY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Minor Orthopedic Surgery	April 1-May 20, once weekly, part time	30.00
	Diseases and Injuries of Bones and Joints	July 5-30, full time	100.00
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]			
At: Grady Memorial Hospital	Orthopedic Surgery	January 7, full time	5.00
Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11	Basic Science in Orthopaedic Surgery [96]	January-June, 6 months, full time	600.00
Tulane University, Division of Graduate Medicine, 1430 Tulane Ave., New Orleans, La.	Surgery of the Hand	March 4-6, full time	25.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Children's Hospital	Orthopedic Surgery 1	Arranged, 1 to 12 months, full time	800.00 12 months
At: Massachusetts General Hospital	Orthopedic Surgery 2	Arranged, 3 to 12 months, full time	800.00 12 months
At: Massachusetts General Hospital and Children's Hospital	Orthopedic Surgery 3	Arranged, 1 to 3 months, full time	200.00 3 months
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Hospital for Joint Diseases	Orthopedic Surgery PM 80 Survey of the Essentials for Orthopedic Surgery	Arranged, 2 weeks, full time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Fractures and Allied Trauma	Spring, 4 weeks, part time	200.00
	Orthopedics in General Practice	April and May, 5 weeks, full time	60.00
	Orthopedics of the Foot	Arranged, 24 hours, part time	100.00

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Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ORTHOPEDIC SURGERY—Continued		
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Orthopedic Surgery for General Surgeons	Arranged, 2 months, part time	$100.00
	Operative Orthopedics (Dissection)	Arranged, 5 sessions, part time	100.00
	Advanced Orthopedics of the Foot	Arranged, 8 sessions, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	583-A Anatomy for Orthopedic Surgeons	January 4-8, full time	90.00
	581-A Basic Sciences as Related to Orthopedic Surgery	January 4-June 18, full time	450.00
	582-A Orthopedics in General Practice	June 14-18, full time	75.00
University of Texas Postgraduate School of Medicine, Galveston [15] At: Southwestern Medical School of The University of Texas	Orthopedic Surgery	February 15-16, full time	20.00
University of Texas Postgraduate School of Medicine, Temple At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Orthopedic Surgery	Arranged, 2 weeks, full time	25.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston 25 At: Auditorium—City County Hospital (Memorial), Corpus Christi	Office Traumatic Surgery and Orthopedics	January 27-March 17, once weekly part time	25.00
	PATHOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	General and Surgical Pathology	October 6-June 10, twice weekly, part time	175.00
Los Angeles Graduate School of Medicine, 1858 W. Washington Blvd., Los Angeles	Pathology	Arranged, once weekly, 13 weeks, part time	150.00
Armed Forces Institute of Pathology, Washington 25, D. C.	Pathology of the Oral Regions [67,68,69,70]	March 8-12, full time	None
Office of the Surgeon General, United States Army, Washington, D. C. At: Brooke Army Medical Center, Fort Sam Houston, Texas	Clinical Laboratory Course [67,68,69,70]	March 15-19, full time	None
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Gross and Surgical Pathology	Arranged, 12 months, full time	900.00
	Gross and Microscopic Pathology	Arranged, 12 months, full time	500.00
	Clinical Course in Gross and Surgical Pathology	Arranged, 6 months, full time	500.00
University of Maryland School of Medicine, 29 S. Greene St., Baltimore 1	Neuropathology	Arranged, 6 months, full time	200.00 [87]
Wayne University College of Medicine, 1512 St. Antoine St., Detroit At: Receiving Hospital	Neuropathology	March 15-June 12, part time	50.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32	Medical Pathological Conference	Every quarter, 12 weeks, part time	15.00
At: Mt. Sinai Hospital	Pathology PM 31 Surgical Pathology	January 16-April 24, part time	100.00
	Pathology PM 32 Laboratory Methods in Blood Banks	February 2-March 9, part time	50.00
At: Columbia Presbyterian Medical Center	Pathology GM 1 Surgical Pathology	July 1, 6 or 12 months, first of each month, full time	230.00-460.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16 [1] At: State University of New York College of Medicine	Gynecological and Obstetrical Pathology [88]	March, once weekly, 10 weeks, part time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Pathology	Arranged, 16 weeks, part time	200.00
	Clinical Pathology	Arranged, 26 hours, part time	100.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Surgical Pathology	Arranged, 3 months, part time	300.00
	Urological Pathology	Arranged, 3 months, part time	150.00
	Gynecological Pathology	Arranged, 2 weeks, part time	100.00
	Blood Transfusions	Arranged, 2 weeks, part time	100.00
	Pathology	Arranged, 3 months, part time	300.00
	Pathology	Arranged, 12 months, part time	1,000.00
	Pathology for Surgeons	Arranged, 1 month, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	444-A Special Pathology for Surgeons	January 7-June 17, full time	125.00
	441-A Gynecological Pathology	January 26-March 18, full time	100.00
University of Texas Postgraduate School of Medicine, Temple, Texas At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Clinical Pathology	Arranged, 2 weeks, full time	25.00
	Surgical Pathology and Pathologic Anatomy	Arranged, 2 weeks, full time	25.00
University of Washington School of Medicine, Seattle 5 [4]	Review for Specialty Boards	Arranged, part time	None
	PEDIATRICS		
University of Colorado Medical Center, Office of Graduate and Postgraduate Medical Education, 4200 E. Ninth Ave., Denver 20	Postgraduate Course in Pediatrics	March 24-26, full time	10.05
American Academy of Pediatrics, 610 Church St., Evanston, Ill. At: Biltmore Hotel, Los Angeles, Calif.	Spring Session	April 5-7, full time	5.00 members 25.00 non-members [100]
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33	865 Recent Advances in Pediatrics	Arranged, 6-12 weeks, part time	
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Personal Course in Pediatrics	March 24, 10 days, part time	100.00
	Department Course in Pediatrics	July 1, 1 year, full time	750.00
	Intensive Course in Cerebral Palsy	June 14, 2 weeks, full time	150.00
	Course in the Diagnosis and Treatment of Congenital and Rheumatic Heart Disease in Infants and Children	April 19, 1 week, full time	100.00
	Roentgenology and Electrocardiography in Heart Disease in Infants and Children	April 26, 3 days, full time	60.00
	Angiocardiography and Catheterization of the Heart and Great Vessels in the Diagnosis of Acquired and Congenital Malformations in the Hearts of Infants and Children	April 29, 3 days, full time	60.00
	Clinical Refresher Course in Pediatrics	Arranged, first of every week, 2 weeks, or 1 month, full time	60.00 2 weeks 100.00 1 month 100.00
	Intensive Course in Pediatrics	April 5, 2 weeks, full time	100.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
PEDIATRICS—Continued			
University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12 [99]	Postgraduate Course in Pediatrics	March 15-17, full time	$30.00
Tulane University, Division of Graduate Medicine, 1430 Tulane Ave., New Orleans, La.	Surgery, Gynecology and Traumatology	January 11-16, full time	Not given
	Pediatric Surgery	February 8-13, full time	50.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Children's Hospital	Pediatrics 2	January 4-April 23, full time	500.00
At: Massachusetts General Hospital	Pediatrics 3	June 14-22, full time	125.00
University of Michigan Medical School, Ann Arbor			
At: University Hospital	Pediatrics	March 31-April 2, full time	30.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Pediatrics for General Physicians	January 7-9, full time	25.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Clinical Pediatrics	Arranged, 1 month, full time	150.00
	Clinical Pediatrics	Arranged, 3 months, full time	250.00
	Clinical Pediatrics	Arranged, 9 months, full time	650.00
	Clinical Pediatrics	Arranged, 12 months, full time	850.00
	Pediatric Allergy: Course II	May, 60 hours, full time	200.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Pediatrics	Arranged, 4 weeks, part time	100.00
New York State Department of Health, Albany 1			
At: University of Buffalo School of Medicine [40]	Intensive Refresher Course in Pediatrics for General Practitioners	Spring, 2 weeks, full time	100.00
At: New York Hospital—Cornell Medical Center [41]	Institute for Physicians and Nurses on Care of Premature Infant	January 4, March 1, May 17, 2 weeks, full time	125.00 physicians 175.00 nurses
New York University Post-Graduate Medical School, 477 First Ave., New York 16	613-A Pediatric Refresher Course (for Specialists)	January 18-20, full time	100.00
	614-B Review of Clinical Pediatrics	March 8-13, full time	50.00
	619-A Pediatric Cardiology	March 31-June 2, part time	60.00
	615-A Practical Pediatric Endocrinology	April 1-June 3, part time	50.00
	616-A Pediatric Allergy	April 6-June 8, part time	60.00
At: Willard Parker Hospital	617-A Communicable Diseases	January 11-15, full time	50.00
Southern Pediatric Seminar, Saluda, N. C.	Pediatric Course of Southern Pediatric Seminar	July 12-24, full time	40.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City	Pediatrics	January 28-30, full time	15.00
University of Texas Postgraduate School of Medicine, Temple			
At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Pediatrics	Arranged, 4 weeks, full time	25.00
University of Texas Postgraduate School of Medicine, Texas Medical Center, 1400 Outer Belt Dr., Houston			
At: Auditorium-Lounge, Texas Medical Association Library, Austin	Pediatrics	January or February, 8 weeks, part time	25.00
University of Washington School of Medicine, Seattle 5 [4]	Emotional Problems of Children	July 26-30, full time	50.00
PHARMACOLOGY			
State University of Iowa College of Medicine, Iowa City	Advanced Pharmacology	Arranged, once weekly, part time	None
PHYSICAL MEDICINE AND REHABILITATION			
Letterman Army Hospital, San Francisco	Rehabilitation of Neuromuscular Disabilities [74,75,76]	April 5-10, full time	None
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Columbia Presbyterian Medical Center	Physical Medicine and Rehabilitation GM 1	July 1, 6 or 12 months, full time	230.00 460.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Physical Medicine and Rehabilitation	Arranged, 4 weeks, full time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	738-A Physical Medicine and Rehabilitation	January 11-October 8, full time	700.00
	7310-B Physical Medicine and Rehabilitation	January 11-February 5, full time	100.00
	7312-B Seminar on the Rehabilitation of Children	January 18-22, full time	40.00
	7312-C Seminar on the Rehabilitation of Children	May 17-21, full time	40.00
PHYSIOLOGICAL CHEMISTRY			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Biochemical Background of Clinical Medicine	March 24, 10 days, part time	100.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit	Intermediary Metabolism	January 1-March 13, once weekly, part time	15.00
	Nutrition	January 1-March 15, part time	35.00
	Seminar	Every quarter, 12 weeks, part time	15.00
PHYSIOLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Surgical Physiology	January 1-June 10, once weekly, part time	75.00
Mercy Hospital, Hillcrest Dr., San Diego 3, Calif.	Applied Physiology	Once weekly, part time	None
University of California School of Medicine, Los Angeles	Pathological Physiology	February 15-May 3, part time	50.00
Yale University School of Medicine, 333 Cedar St., New Haven, Conn.[8]	Physiology 200, Brain Tumor Registry	Arranged, full time	Not stated
State University of Iowa College of Medicine, Iowa City	Advanced Physiology of the Digestive System	Arranged, 1 day, part time	None
	Microphysiology	Arranged, once weekly, full time	None
	Advanced Physiology of Muscle and Nerve	Arranged, weekly, full time	None
University of Pennsylvania Graduate School of Medicine, Philadelphia 4	Ionic (Acid-Base) Balance and Water Balance with Clinical Applications	May 26-28, full time	60.00
	Modern Viewpoints in Carbohydrate and Fat Metabolism with Clinical Applications	June 7-8, full time	40.00
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13, Pa.	Physiology	January-June, once weekly, full time	25.00
POLIOMYELITIS			
Rancho Los Amigos Respiratory Center for Poliomyelitis, Hondo, Calif.			
At: Orthopaedic Hospital, Los Angeles	Poliomyelitis	Spring, 5 days, full time	Not given
Children's Medical Center, 300 Longwood Ave., Boston	Poliomyelitis Refresher Course for Physicians	June and August, 5 days, full time	50.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	POLIOMYELITIS—Continued		
National Foundation for Infantile Paralysis, Inc., 120 Broadway, New York 5 At: Georgia Warm Springs Foundation	Care of Poliomyelitis	January and April, 5 days, full time	None
University of Pittsburgh School of Medicine, 3941 O'Hara St., Pittsburgh 13 At: D. T. Watson School of Physiatrics, Leetsdale, Pa.	Management of Acute Poliomyelitis with Emphasis on Prescription of the Respirator and Rocking Bed	May, 5 days, full time	$10.00
	PROCTOLOGY		
University of California School of Medicine, Los Angeles At: Campus and San Diego	Office Proctology	April 29, full time	17.50
Los Angeles Graduate School of Medicine, 1858 W. Washington Blvd., Los Angeles 7	Proctology	Arranged, once weekly, 7 weeks, part time	50.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Lectures and Cadaver Course in Proctology	January 27, March 10, May 26, 5 days, part time	100.00
Tufts College Medical School, Postgraduate Division, 171 Harrison Ave., Boston, Mass.[12] At: Boston Dispensary, Boston and Mt. Auburn Hospital, Cambridge	Proctology II	May 3-28, full time	250.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Proctology for General Physicians	May 17-22, full time	40.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16 [1] At: Jewish Hospital	Proctology	April, twice weekly, 6 weeks, part time	40.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Proctology, Gastroenterology, Operative Proctology (Dissection)	January, April, 6 weeks, part time	200.00
	Clinical Proctology and Gastroenterology	January, April, 6 weeks, part time	100.00
	Clinical Proctology	Arranged, 6 weeks, part time	75.00
	Clinical and Cadaver Proctology	Arranged, 6 weeks, part time	175.00
University of Texas Postgraduate School of Medicine, Temple At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Proctology	Arranged, 2 weeks, full time	25.00
	PSYCHOLOGY		
University of California School of Medicine, Los Angeles	Diagnostic Psychological Testing: Contributions to Differential Diagnosis	January 11-February 18, twice weekly, part time	50.00
	PUBLIC HEALTH		
New York State Department of Health, Albany 1 At: Albany-Syracuse, Rochester-Buffalo, Poughkeepsie	Extension Course in Public Health	Continuously, 6 days, part time	25.00
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Mellon Institute, Fifth and Bellefield Aves., Pittsburgh 13	Immunology	May 17, 10 weeks, part time	Not given
	PULMONARY DISEASE		
Trudeau Foundation, Saranac Lake, N. Y.[95] At: Saranac Lake (and neighboring sanatoria)	Trudeau School of Tuberculosis	May 31-June 25, full time	100.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Pulmonary Tuberculosis	Arranged, 3 weeks, full time	175.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	5417-A Acute and Chronic Pulmonary Diseases	March 8-12, full time	45.00
Saranac Lake Medical Society, 38 Church St., Saranac Lake, N. Y.[42]	Symposium on Tuberculosis and Chronic Chest Diseases for General Practitioners	July 12-16, full time	[89]
	RADIOLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Roentgenology	January 1-June 8, once weekly, part time	100.00
University of Southern California School of Medicine, 1200 N. State St., Los Angeles 33 At: Los Angeles County Hospital	858. Diagnosis and Therapeutic Radiology	Arranged, 12 months, full time [103a]	1,000.00
Yale University School of Medicine, 333 Cedar St., New Haven, Conn.[3]	Radiology 303, X-Ray Physics	January 7, March 11, once weekly, part time	20.00
	Radiology 304, Radioactivity	March 8-20, once weekly, part time	60.00
American College of Radiology, 20 N. Wacker Dr., Chicago 6	Conference of Teachers of Clinical Radiology [99]	February 6, full time	Not stated
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	X-Ray Interpretation	March 24, 10 days, part time	100.00
	Course in Diagnostic Radiology and X-Ray Therapy	Arranged, 12 months, full time	750.00
	Course in Diagnostic Roentgenology	Arranged, 8 months, full time	500.00
	Routine Clinical Course in Diagnostic Roentgenology and Fluoroscopy	Arranged, every 2 weeks, 2 weeks, full time	70.00
	Clinical and Didactic Course in Diagnostic Roentgenology	January 4, March 1, May 3, 2 weeks, full time	125.00
	Diagnostic Roentgenology	March 24, 10 days, part time	100.00
	High and Low Voltage X-Ray Therapy	Arranged, first of every week, 1 or 2 weeks, 1 month, full time	60.00 1 week 110.00 2 weeks 200.90 1 month [97]
Northwestern University Medical School, 303 E. Chicago Ave., Chicago 11	Radiation Physics and Radiobiology Including Radioisotopes [96]	Spring quarter, weekly, part time	
University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12	Roentgenological Physics [104]	January 24-March 21, part time	25.00
	Postgraduate Course in Radiology [99]	February 15-17, full time	30.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Peter Bent Brigham Hospital	General Radiology 1	Arranged, 1 month or more, full time	150.00 a month
At: Massachusetts General Hospital	General Radiology 2	Arranged, 1 month or more, full time	150.00 a month
At: Boston City Hospital	General Radiology 3	Arranged, 1 month or more, full time	150.00 a month
At: Children's Hospital	Pediatric Radiology	Arranged, 1 month or more, full time	150.00 a month
University of Michigan Medical School, Ann Arbor At: University Hospital	Diagnostic Roentgenology	April 5-9, full time	50.00
Wayne University College of Medicine, 1512 St. Antoine St., Detroit At: Receiving Hospital	Medical X-Ray Conference	Every quarter, 12 weeks, part time	15.00

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	RADIOLOGY—Continued		
University of Minnesota Center for Continuation Study, Minneapolis 14	Radiology for General Physicians	May 3-5, full time	$25.00
Seton Hall University School of Education, 31 Clinton St., Newark 2, N. J.[101]			
At: Newark City Hospital	Cardiac Roentgenology and Fluoroscopy	January 21, once weekly, part time	100.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Mt. Sinai Hospital	Radiology PM 32 Roentgen Diagnosis of Lesions of the Gastrointestinal Tract	March 15-26, part time	25.00
	Radiology PM 31 Radiology of the Chest	March 29-April 6, full time	25.00
	Radiology PM 34 Differential Diagnosis in Radiology of the Chest	April 12-June 14, part time	50.00
	Radiology PM 33 Radium Therapy	April 13-May 25, part time	25.00
	Radiology PM 35 Use of Radioactive Iodine	Arranged, 3 months, part time	250.00
At: Columbia-Presbyterian Medical Center	Radiology PM 1 Radiological Physics	January 12-April 2, part time	25.00
Joint Committee on Post-Graduate Education, 1313 Bedford Ave., Brooklyn 16 [1]			
At: Beth El Hospital	Roentgen Diagnosis in Gastroenterology	April, once weekly, 8 weeks, part time	20.00
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th St., New York	Diagnostic Roentgenology	Arranged	150.00
	Radium and Roentgen Therapy	Arranged	150.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Roentgen Interpretation and Technic	January, April, 3 months, full time	300.00
	Advanced Diagnostic Roentgen and Radiotherapy	January, April, 3 months, full time	300.00
	Diagnostic Roentgen and Radiation Therapy	January, April, 12 months, full time	1,000.00
	Practical Course in Superficial and Deep X-Ray Therapy	Arranged, 4 weeks, part time	100.00
	Advanced Course in Radiotherapy	Arranged, 4 weeks, part time	100.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	654-A Radiobiology	January 28-June 10, part time	75.00
	5428-B Cardiac Roentgenology	February 4-5, full time	30.00
	652-A Roentgen Aspects of Diseases of Pancreas, Gall Bladder, Liver and Spleen	May 5-7, full time	40.00
Environmental Health Center, Public Health Service, Cincinnati, Ohio	Basic Radiation Physics and Surgical Techniques	January 11-22, full time	None
	Laboratory Assay of Radioelements and X-Ray Survey Techniques	January 25-February 5, full time	None
	Occupational Health Problems	February 8-19, full time	None
	Basic Radiation Physics and Surgical Techniques	May 3-14, full time	None
	Laboratory Assay of Radioelements and X-Ray Survey Techniques	May 17-28, full time	None
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City	Radiology	May 7-8, full time	10.00
Reed College, Portland, Ore.[98]	Radiobiology	Summer, 6 weeks, and fall semester	Not given
Institute of Nuclear Studies, Oak Ridge, Tenn.	Basic Course in Techniques of Using Radioisotopes	February 8-March 5 and March 15-April 9, full time	25.00
University of Texas Postgraduate School of Medicine, Temple			
At: Scott and White Memorial Hospitals; Scott, Sherwood, and Brindley Foundation	Radiology	Arranged, 1 week, full time	25.00
	SURGERY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	Basic Science in Surgery and Surgical Specialties	October 4-June 11, full time	800.00
	Surgical Diseases of the Peripheral Vascular System	January 5-February 16, once weekly, part time	30.00
	Operative Surgery	March 24-June 9, once weekly, part time	200.00
	Surgical Diseases of Children	April 6-27, once weekly, part time	20.00
	Thoracic Surgery	April 14-June 2, once weekly, part time	30.00
George Washington University School of Medicine, 1335 H St., N. W., Washington 5			
At: George Washington University Hospital	Surgical Diagnosis	March 29-April 2, full time	75.00
Los Angeles Graduate School of Medicine, 1858 W. Washington Blvd., Los Angeles 7	General Surgery	Once weekly, 11 weeks, full time	81
University of California School of Medicine, Los Angeles	General Surgery	February 3-April 21, part time	50.00
University of California School of Medicine, Medical Extension, Medical Center, San Francisco 22			
At: University of California Hospital	Conference on General Surgery	September 13-17, full time	Not given
Emory University School of Medicine, 69 Butler St., S. E., Atlanta, Ga.[5]			
At: Grady Memorial Hospital	Surgery	May 6, full time	5.00
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Panel Course in Surgery: Gallbladder and Liver	January 13, 5 days, part time	125.00
	Panel Course in Surgery: Small Intestine, Pancreas	February 17, 5 days, part time	125.00
	Surgical Anatomy on the Cadaver, Clinical Surgery, Preoperative and Postoperative Management	March 22, June 21, 2 weeks, full time	150.00
	Panel Course in Surgery: Large Intestine	March 24, 5 days, part time	125.00
	Panel Course in Surgery: Vascular Diseases	April 28, 5 days, part time	125.00
	Course in the Treatment of Varicose Veins	Arranged, every month, 10 hours, part time	50.00
	Personal Course in Clinical Surgery	March 24, 10 days, part time	150.00
	Treatment of Varicose Veins	Arranged, twice a month, 2 days, full time	50.00
	Thoracic Surgery	June 7, 1 week, full time	125.00
	Esophageal Surgery	June 21, 1 week, full time	150.00
	Personal Course in General Surgery	February 8, July 12, 1 week, full time	150.00
	Intensive Review Course Considering Basic Principles in General Surgery	March 29, 2 weeks, full time	200.00
	Gallbladder Surgery	April 19, June 28, 10 hours, 3 days, full time	100.00
	Breast and Thyroid Surgery	June 21, 1 week, full time	150.00
	Surgery of Colon and Rectum	March 1, April 12, May 10, June 7, 1 week, full time	125.00

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Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	SURGERY—Continued		
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Course in General Surgery	April 19, 2 weeks, full time	$250.00
	Surgery of Extremities	March 24, 10 days, part time	125.00
	Surgical Technic with Practice	February 10, 10 days, part time	250.00
	Surgical Anatomy on the Cadaver	March 24, 10 days, part time	125.00
	Practical and Didactic Course in Proctoscopy and Sigmoidoscopy	January 5, February 16, March 16, April 13, May 11, June 15, 3 days, part time	50.00
	Thoracic Surgery	March 25, 10 days, part time	100.00
	Personal Course in Surgical Diagnosis, Pre- and Post-Operative Management	March 24, 10 days, part time	100.00
	Intensive Course in Surgical Technic	January 25, February 8, February 22, March 8, April 5, April 19, May 3, May 17, June 7, 2 weeks, full time	250.00
	Surgical Technic, Clinical Surgery, Surgical Anatomy, Preoperative and Postoperative Management	March 8, June 7, full time	325.00
Northwestern University Medical School, 303 E. Chicago Ave., Chicago	Endaural Otologic Surgery	April 5-30, full time	500.00
University of Kansas Medical Center, 39th and Rainbow Blvd., Kansas City 12 [99]	Postgraduate Course in Surgery	January 18-21, full time	50.00
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15			
At: Massachusetts General Hospital	General Surgery 1	June 1-26, full time	250.00
	General Surgery 2	Arranged, 4 to 12 months, full time	800.00 12 months
Wayne University College of Medicine, 1512 St. Antoine St., Detroit	Surgery Seminar	Every quarter, once weekly, part time	15.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Surgery for General Surgeons	May 6-8, full time	25.00
	Emergency Surgery for General Physicians	April 1-3, full time	25.00
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: Columbia Presbyterian Medical Center	Surgery GM 2 Principles of Cardiovascular Surgery	January 1-July 1, 6 or 12 months, full time	460.00 for 6 months
	Surgery GM 2-A Studies in Cardiovascular Surgery	January 1-July 1, 6 or 12 months, full time	460.00 for 6 months
New York Medical College, Flower and Fifth Ave. Hospitals, 1 E. 105th Street, New York	Surgical Aspects of Peripheral Vascular Diseases	Arranged	200.00
	Gastrointestinal Surgery	Arranged	200.00
	Peritoneoscopy	Arranged	100.00
	Surgical Technique	Arranged, 50 hours, part time	375.00
	Thoracic Surgery	Spring, 3 weeks, full time	365.00
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical and Operative (Cadaver) Surgery	January, April, 4 weeks, full time	200.00
	Clinical Surgery	January, April, 4 weeks, full time	100.00
	Combined Surgical Course Including Cadaver Surgery and Gynecology	January, April, 2 months, full time	350.00
	Traumatic Surgery Including General Surgery, Orthopedic Surgery and Physical Medicine	Arranged, 2 months, part time	200.00
	Thoracic Surgery	Arranged	200.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	6612-B Cardiac Resuscitation	January 15, full time	50.00
	662-A Basic Problems in Cancer Therapy (for Specialists)	January 25-February 6, full time	200.00
	660-A Anatomy and Physiology of the Autonomic Nervous System and Their Clinical Application	January 18-23, full time	150.00
	6612-C Cardiac Resuscitation	March 19, full time	50.00
	661-B Review of General Surgery (for Specialists)	March 29-April 24, full time	300.00
At: Beekman Downtown Hospital	668-A Diagnosis and Treatment of Fractures and Dislocations	February 1-13, full time	125.00
	667-A Surgery of the Hand	March 22-27, full time	90.00
	669-A Surgery of Trauma	April 1-June 3, full time	100.00
University of Oklahoma School of Medicine, 800 N. E. 13th St., Oklahoma City	Surgery	January 6-8, full time	15.00
	General Surgery	March 2-10, 10 weeks, part time	25.00
	Trauma	April 2-3, full time	10.00
John Gaston Hospital, 860 Union Ave., Memphis, Tenn.	Abdominal Surgery—Principle of Diagnosis and Management	May 12-14, full time	50.00
University of Texas Postgraduate School of Medicine, Galveston [15]			
At: Southwestern Medical School of The University of Texas	Surgery	April 19-21, full time	30.00
University of Texas Postgraduate School of Medicine, Temple [44]	Medical and Surgical Conference	March 1-3, full time	Not given
University of Wisconsin School of Medicine, 418 N. Randall Ave., Madison			
At: University Hospitals	Continuation Course	Arranged, 1 month, full time	100.00
	THERAPY		
University of North Carolina School of Medicine, Extension Division, P. O. Box 1020, Chapel Hill, N. C.			
At: N. C. Memorial Hospital, Chapel Hill, N. C.	Implications of Newer Diagnostic and Therapeutic Techniques	April 7-9, full time	25.00
University of Pennsylvania Graduate School of Medicine, Philadelphia 4			
At: Graduate Hospital	Neurologic Emergencies Amenable to Satisfactory Therapy	June 8-10, full time	60.00
	TROPICAL MEDICINE		
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York 32			
At: School of Public Health	Tropical Medicine 202, Parasitic Diseases	March 29-May 22, part time	50.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	735-A Tropical Medicine	January 4-February 19, full time	300.00
	UROLOGY		
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles 33	General Urology	January 6-March 10, once weekly, part time	35.00
University of California School of Medicine, Los Angeles			
At: Campus and San Diego	Office Urology	April 30, full time	17.50

References will be found on page 1399.

Postgraduate Continuation Courses for Physicians—Jan. 1, 1954, to July 15, 1954—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
UROLOGY—Continued			
Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12	Intensive Course in Urology	April 19, 2 weeks, full time	$225.00
	Practical Course in Cystoscopy	January 11, January 25, February 8, February 22, March 8, March 22, April 5, May 3, May 17, June 7, June 21, July 12, 10 days, full time	150.00
University of Minnesota Center for Continuation Study, Minneapolis 14	Urology for General Physicians	April 8-10, full time	25.00
New York Polyclinic Medical School and Hospital, 345 W. 50th Street, New York 19	Instrumental Urology	Arranged, 4 weeks, part time	100.00
	Operative Surgery (Urological) for Specialists	Arranged, 2 months, part time	150.00
New York University Post-Graduate Medical School, 477 First Ave., New York 16	674-A Refresher Course in Basic Urology	January 18-22, full time	60.00
	671-A Advanced Course in Urology (for Specialists)	May 3-29, full time	175.00
Oswald Swinney Lowsley Medical Group, 111 E. 71st St., New York 21 [48]	Postgraduate Course [92]	Arranged, 1 year, full time	740.00
University of Texas Postgraduate School of Medicine, Temple			
At: Scott and White Memorial Hospitals and Scott, Sherwood, and Brindley Foundation	Clinical Urology	Arranged, 2 weeks, full time	25.00

Sponsoring and Contributing Agencies

1. Medical Society of the County of Kings and State University of New York College of Medicine.
2. Ciba Pharmaceutical Products, Inc.
3. Hartford Hospital, Grace-New Haven Community Hospital and Connecticut State Medical Society.
4. Washington State Medical Association and Washington State Department of Health.
5. Medical Association of Georgia and Georgia Chapter of the American Academy of General Practice.
6. Minnesota Heart Association.
7. Columbia University College of Physicians and Surgeons.
8. In cooperation with appropriate county medical society. Some equipment supplied by Pennsylvania Heart Association.
9. Rochester Regional Hospital Council, Rochester, New York.
10. Tulane University and Louisiana State University.
11. Council on Postgraduate Medical Education and Laennec Society of Philadelphia.
12. Bingham Fund Associates and New England Center Hospital, Boston.
13. American College of Physicians.
14. University of California, Stanford University and University of California Medical School.
15. Dallas Southern Clinical Society, the Texas Medical Association, and the Texas Academy of General Practice.
16. New York State Department of Health, Albany.
17. Medical Society of the State of New York, New York Academy of General Practice, New York City Cancer Committee, New York State Department of Health Bureau of Cancer Control and the New York State Department of Health.
18. New York City Department of Health, Medical Society of State of New York, New York Academy of General Practice, New York City Cancer Committee.
19. Pennsylvania Department of Health and American Cancer Society.
20. Department of Health, Puerto Rico Medical Association, Liga Puertorrequena Contra el Cancer, Asociacion para la Lucha Contra el Cancer.
21. South Carolina Division of American Cancer Society and State Board of Health.
22. Tennessee Department of Health and Tennessee Division of American Cancer Society.
23. Vermont State Cancer Society.
24. Medical College of Alabama, Birmingham.
25. Arizona State Department of Health.
26. San Diego County Medical Society.
27. The Medical Alumni Association.
28. Weld County Medical Society, Greeley.
29. In collaboration with other agencies.
30. Michigan State Medical Society, Lansing; Wayne University College of Medicine, Detroit; Michigan Department of Health, Lansing.
31. Medical College of South Carolina.
32. University of Tennessee, Vanderbilt University and Tennessee Department of Public Health.
33. King County Academy of General Practice.
34. Washington Academy of General Practice.
35. State Department of Mental Health, Joint Committee of State Mental Hospitals, Institute of Living, Hartford. Part of Seventh Postgraduate Seminar offered by the Connecticut Postgraduate Seminar in Psychiatry and Neurology, Inc.
36. South Carolina Mental Health Commission and National Institute of Health.
37. State Obstetric and Gynecologic Society.
38. Stanford University School of Medicine.
39. Massachusetts Eye and Ear Infirmary
40. Medical Society of the State of New York.
41. U. S. Children's Bureau.
42. American Trudeau Society and Adirondack Counties Chapter of the New York State Academy of General Practice.
43. Adirondack Counties Chapter of the New York State Academy of General Practice.
44. Scott and White Memorial Hospitals, and Scott, Sherwood and Brindley Foundation, Temple division of the University of Texas, Postgraduate School of Medicine, University of Texas, Postgraduate School of Medicine, Houston, Texas.
45. St. Clare's Hospital.

Footnotes

46. Graduate. Lectures, seminars, and practical experience in administration.
47. Preparation for examination of specialty board in surgery.
48. Preparation for examination of specialty boards in surgery and surgical specialties.
49. Arranged according to registration, content and duration.
50. $25.00 Laboratory. $35.00 in part of $100.00 complete course.
51. Interns, Residents, none; Cleveland area M.D.'s, $30.00; other M.D.'s, $60.00.
52. $50.00, residents and $75.00, non-residents.
53. Designed for Nondermatologists.
54. Clinical and basic science course.
55. $75.00 first month, $50.00 each additional month.
56. Graduate. Lectures, seminars and 1 year of practical experience in a hospital.
57. For members of the American Academy of Compensation Medicine, no fee.
58. In association with American Academy of Compensation Medicine. Nos. 483 and 484 in consecutive weeks supplement each other and give comprehensive course in industrial medicine.
59. $50.00 for 5 days, $90.00 for 10 days.
60. Registration accepted for 10 days or for the first or second 5-day period.
61. Preparation for board certification.
62. $60.00 total—$10.00 by physician, $50.00 by New York State Department of Health. Limited number of fellowships available.
63. $100.00 total—$10.00 by physician, $90.00 by New York State Department of Health. Limited number of fellowships available.
64. Scientific program for general practitioners.
65. For non-members of the AAGP.
66. Postgraduate scientific meeting.
67. Attendance is encouraged from the following individuals:
    a. Medical Corps Officers of the Armed Forces on active duty.
    b. Medical Corps Officers of the Armed Forces not on active duty.
    c. Physicians from other Federal Agencies.
    d. Other civilian physicians desiring to attend.
68. **Application procedure.** Applications must reach the addressees listed below not later than six weeks before the start of the course.
    a. Forward Applications: From Army Medical Corps officers and full-time Civil Service physicians at Army installations to Office of the Surgeon General, Department of the Army, Washington 25, D. C., ATTENTION: Personnel Division, Career Management Branch.
    b. From Army Reserve Medical Corps officers not on active duty through channels to the Army Area Commander.
    c. From National Guard Medical officers through channels to the National Guard Bureau, Washington 25, D. C.
    d. Of medical officers from other branches of the Armed Forces through regular channels.
    e. Of all others to Commander of the installation conducting the course.
69. Designed for individuals who are board qualified and/or board certified, Chiefs, Assistant Chiefs or Assistant Chiefs of Services, and officers advanced in this specialty.
70. Designed for individuals partially qualified in the specialty or officers responsible for medical treatment in this specialty.
71. From the educational and research viewpoint this symposium for use in national defense should be conducted. Properly handled, it will lead to better understanding of physical and mental health standards and will summarize all information in this field and show areas requiring further study.
72. Open to physicians formally approved and accepted for training in psychoanalysis by Admissions Committee of the Los Angeles Institute for Psychoanalysis.
73. Plus $5.00 registration fee. Part of M.A. and Doctoral Training in psychology and psychiatry department. 2 credits.
74. Accredited by the American Psychoanalytic Association for training in the practice of psychoanalysis
75. Open only to psychiatrists who meet the admission requirements of each institute.
76. Open to qualified physicians interested in the application of psychoanalytic theory to the general practice of medicine.
77. 3-yr. course for qualified psychiatrists.
78. Open to qualified physicians by arrangement with the Dean.
79. Open to qualified physicians not specializing in psychiatry.
80. Open to general practitioners of medicine and given in Pittsburgh, Pennsylvania.
81. Advanced candidates in training only.
82. For uncertified specialists and general practitioners; 11 hours' credit in General Practice Academy.
83. Part of resident staff training.
84. Review for general practitioners.
85. Basic science course in preparation for residency in ophthalmology.
86. Basic sciences in ophthalmology.
87. Plus $10.00 laboratory fee.
88. Review for board examination.
89. $40.00 AAGP members; $50.00 non-members.
90. Deals with pedagogical problems.
91. $125.00, personal dissection. $95.00, observation dissection.
92. Practice in diagnosis. Treatment and postoperative care.
93. Florida Clinical Diabetes Association.
94. Florida Medical Association and University of Florida Graduate School.
95. Lillia Babbitt Hyde Foundation.
96. Basic Science course for specialty board certification.
97. Residents $10.00; Physicians and Specialists $25.00.
98. Armed Forces Special Weapons Project, Washington, D. C.
99. Kansas Medical Society.
100. 6 weeks, $25.00; 9 weeks, $37.00; 12 weeks, $50.00.
101. Essex County Medical Society.
102. Baylor University College of Medicine and Houston Heart Association.
103. May also be taken for 3 months at $250.00; 6 months, $500.00; 9 months, $750.00.
104. Radiological Society of Greater Kansas City.
105. $10.00 for non-members; $15.00 members; season $25.00.
106. Enrollment for study leading to degree in industrial health subjects.

MEDICAL LITERATURE ABSTRACTS

UNITED STATES

A.M.A. Arch. Ophthalmology, Chicago

50:275-400 (Sept.) 1953

Diabetic Retinopathy Treated with Testosterone. R. H. Bedrossian, D. S. Pocock, W. F. Harvey Jr. and A. S. Sindoni.—p. 277.
Corneal Fluid Metabolism: Experiments and Observations. R. H. Bock and A. E. Maumenee.—p. 282.
Intravenous Use of Corticotropin in Angioneurotic Edema of Orbit. A. Callahan.—p. 286.
Dibenamine: An Experimental and Clinical Study. S. L. DeLong and H. G. Schele.—p. 289.
Use of Hydrocortisone (Hydrocortone) Acetate in Ophthalmology. J. Laval.—p. 299.
Aspiration Biopsy in Intraocular Tumors. J. C. Long, W. C. Black and R. W. Danielson.—p. 303.
Effect of Physostigmine and Pilocarpine on Iris Sphincter of Normal Man: Is it Competitive or Additive? Pupillographic Studies. O. Lowenstein and I. E. Loewenfeld.—p. 311.
Gonioscopy in Foreign Bodies of Chamber Angle. H. L. Moskowitz. —p. 319.
Epinephrine and Arterenol Determinations in Aqueous Humor and Iris and Ciliary Body of Cattle. B. Pillat and M. M. Powers.—p. 323.
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Coloboma of Lower Lid and Choroid, with Facial Defects and Deformity of Hand and Forearm. P. Tower.—p. 333.

American Heart Journal, St. Louis

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Statistical Comparison of Normal Ballistocardiograms Recorded with High-Frequency Table and with Various Instruments Which Record Body Motion Directly. R. A. Helm and A. Iglauer.—p. 321.
Time Relationships of Ballistocardiographic Movements. J. R. Pierce, L. Christianson and R. P. Walker.—p. 329.
Interpretation of Velocity Measurement Ballistocardiogram. W. Buckingham, G. C. Sutton, R. Rondinelli and D. C. Sutton.—p. 341.
Left Auricular Pressure Curve Before and During First Degree Atrioventricular Block. V. O. Björk, C. Crafoord and G. Malmström. —p. 348.
*Clinical and Hemodynamic Features of Uncomplicated Interatrial Defect in Adults. C. B. Chapman and R. Fraser.—p. 352.
Comparative Analysis of Eccentric Double-Layer Representation of Human Heart. E. Frank.—p. 364.
Studies on Mechanism of Ventricular Activity: V. Intramural Depolarization Potentials in Normal Heart with Consideration of Currents of Injury in Coronary Artery Disease. R. Kennamer, J. L. Bernstein, M. H. Maxwell and others.—p. 379.
Ventricular Premature Systoles with Postponed Compensatory Pause. R. Langendorf.—p. 401.
Architectonics of Heart. R. P. Grant.—p. 405.
*Nonspecific Myocarditis in Acute Rheumatic Fever. O. Saphir and R. Langendorf.—p. 432.
Sinoauricular Nodal Depression and Atrioventricular Nodal Rhythm Due to Quinidine: Report of Proved Case. A. J. Linenthal, B. M. Winer and M. I. Klayman.—p. 443.

Features of Interatrial Defect.—Ten men and nine women between the ages of 17 and 51 years with interatrial defects as diagnosed by cardiac catheterization were studied. The existence of a functioning communication between the atriums was thought probable if the oxygen content of the right atrial blood exceeded that of blood from the innominate vein or superior vena cava by 2 vol. %. The average difference between the two points in the authors' patients was 4.4 ± 1.7 vol. %. The catheter was passed through the interatrial defect in five patients. Functioning interatrial communications may exist for many years without producing symptoms. In 8 of the 19 patients the defect was detected only at the age of 18 or later. Prominent systolic murmurs, usually basal, were frequently observed. Basal systolic thrills that accompanied the murmurs in nine patients may cause diagnostic confusion. Calculations of the pulmonary arterial flow showed that it is often markedly increased but may be only slightly so. Slight to moderate pulmonary arterial hypertension was present in nine of the patients and was moderately severe in two. There is apparently no relation between flow and pressure in the pulmonary arterial system in patients with interatrial defects, but pulmonary vascular resistance is probably low in most of these patients. All but two of the patients showed definite increase in right ventricular pressure work, and in three of them it was more than six times normal. The available data suggested that the kinetic work also was increased significantly, although its absolute value is difficult to determine. The frontal plane QRS vector was usually +90 degrees or more, and right bundle branch block was not uncommon. Some relation between pulmonary flow and frontal plane QRS vector probably exists but could not be established definitely in this study.

Myocarditis in Rheumatic Fever.—Electrocardiographic changes and microscopic observations of the myocardium of 22 patients with rheumatic fever who had died of myocardial failure are reported. Only cases with typical recent Aschoff bodies in the myocardium in the absence of severe valvular deformities were chosen. Most of the patients had been sick three months or less. Shortness of breath, cyanosis, cough, expectoration of bloody sputum, tachycardia, and gallop rhythm were common. Electrocardiographic evidence of myocardial involvement was noted in all cases in which electrocardiographic records were available. In addition to Aschoff bodies, interstitial nonspecific myocarditis was present in every case. In 18 of 22 hearts, the parenchymatous changes noted were characterized by circumscribed foci of necrotic muscle fibers surrounded by small accumulations of endothelial leukocytes, lymphocytes with a few multinucleated cells, and Anitschkow's myocytes. These granulomas resembled Aschoff bodies but varied in some essentials from true Aschoff bodies. It is suggested that the electrocardiographic changes in acute rheumatic fever are due to nonspecific myocarditis.

American Journal of Hygiene, Baltimore

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Escherichia Coli O 55 B 5 Infection in Gastroenteritis Ward: Epidemiological Applications of H Antigen Type Determinations. J. Wright and A. T. Roden.—p. 133.
Enhancement of Immunogenicity of Typhoid Vaccine by Retention of Vi Antigen. M. Landy.—p. 148.
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Studies of Human Body Lice, Pediculus Humanus Corporis: II. Quantitative Comparisons of Susceptibility of Human Body Lice and Cotton Rats to Experimental Infection with Epidemic Typhus Rickettsiae. H. S. Fuller.—p. 188.
Development of Neutralizing Antibodies Against Three Types of Poliomyelitis Virus During an Epidemic Period: Ratio of Inapparent Infection to Clinical Poliomyelitis. J. L. Melnick and N. Ledinko.—p. 207.
Poliomyelitis Viruses in Tissue Culture. V. Reaction of Virus and Antibody; Variables of Quantitative Neutralization Test. N. Ledinko and J. L. Melnick.—p. 223.
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Titles marked with an asterisk (*) are abstracted.

American Journal of Physiology, Washington

174:191-330 (Aug.) 1953. Partial Index

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Modifying Actions of Procaine on Myoneural Blocking Actions of Succinylcholine, Decamethonium and *d*-Tubocurarine in Dogs and Cats. C. H. Ellis, A. L. Wnuck, E. J. De Beer and F. F. Foldes.—p. 277.
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Journal of Aviation Medicine, St. Paul

24:257-372 (Aug.) 1953

*Altitude Stress in Subjects with Impaired Cardiorespiratory Function: Comparison of Responses of Normal Subjects, Patients with Angina Pectoris, and Patients with Anemia to Hypoxia. J. P. Marbarger, P. H. Wechsberg, C. V. Pestel and others.—p. 263.
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Effect of High Breathing Pressure on Cardiac Output With and Without Counter Pressure. C. C. Cain and D. I. Mahoney.—p. 308.
Escape from Aircraft by Downward Ejection. W. S. Rothwell and E. G. Sperry.—p. 322.
Operational Hazard of Microwave Radiation. S. I. Brody.—p. 328.
Dynamic Centrifuge Trials of Anti-G Valves. R. A. Stubbs.—p. 334.
Reduction of Aircraft Engine Noise Hazards. E. S. Mendelson.—p. 340.

Cardiorespiratory Function During Altitude Stress.—Marbarger and coworkers report observations on 10 healthy young men, 8 patients with history and symptoms of angina pectoris but without further evidence of acute cardiac disease, and 14 patients with chronic anemia. All subjects were taken to simulated altitudes of 10,000 ft. (10 minutes stay) and 18,000 ft. (10 minutes stay for angina patients and 20 minutes for normal and anemia subjects) in a low pressure, air-conditioned chamber while resting on a horizontal, low frequency, critically damped ballistocardiograph. Measurements were made of arterial blood oxygen and carbon dioxide content and cellular components of blood. Direct tonometry of arterial and venous pressures was performed. Electrocardiographic, ballistocardiographic, and pressure readings and respiratory changes were obtained. 1. Cardiac output increased in all subjects with inhalation of ambient air at reduced barometric pressures existing at 10,000 ft. and 18,000 ft. simulated altitude and promptly returned to ground level values with inhalation of 100% oxygen. 2. Increased cardiac output occurred as a result of an increase in pulse rate and stroke volume in all groups of subjects. 3. Peripheral resistance to blood flow decreased markedly in all groups of subjects on exposure to ambient atmosphere at simulated altitudes up to 18,000 ft. 4. "Useful work of the left ventricle" markedly increased in all subjects during exposure to hypoxia. 5. Mean venous pressure remained unchanged in the normal subjects but increased with duration of stress in both angina and anemia patients. 6. Electrocardiographic changes occurred with hypoxic stress in normal subjects. There was depression or inversion of T-wave and depression of S-T segment. Similar changes were observed in the anemia patients and in those with angina pectoris, although many of the electrocardiograms of the latter group were abnormal before the test was started. 7. The normal group of subjects and the patients with anemia withstood the test throughout the prescribed course, but the angina pectoris group withstood only 10 minutes at 18,000 ft. before anginal pains occurred in some of the patients; the test was discontinued at this time. 8. The over-all responses of the normal and abnormal subjects were so similar that this method cannot serve as a test in persons with questionable evidence of cardiovascular disease. With regard to the advisability of travel by air of patients with cardiovascular disorders, the authors are of the opinion that many patients now advised not to use commercial aviation could travel by air very safely. This is especially true for those persons who have flown prior to presenting evidence of cardiorespiratory disease.

Journal of Nervous and Mental Disease, New York

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Original Apparatus for Colostomy Irrigation. A. Hurwitz and D. B. Alderman.—p. 410.

Chlortetracycline (Aureomycin) in Prophylaxis of Rheumatic Fever.—Long-term prophylaxis of rheumatic fever is extremely desirable because the mildness of micrococcic (streptococcic) infections causes them to go unrecognized in many cases and because control of this disease is especially essential to the attack on heart disease as a whole. The use of sulfonamides and penicillin has proved somewhat effective, but unsatisfactory for long-term use, because of toxicity to the patient and development of resistance on the part of the bacteria. A study of 35 patients in Memphis, Tenn., 23 treated with chlortetracycline (aureomycin) and 12 used as a control group, revealed the efficacy of administering 500 mg. of chlortetracycline daily over a period of from 2 to 20 months. Undesirable side-effects were slight, and there was no evidence of the development of resistant strains of group A beta hemolytic micrococci.

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*Certain Physiologic, Pathologic, and Surgical Features of Complete Transposition of Great Vessels. C. W. Lillehei and R. L. Varco. —p. 376.

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*Experiences with Portacaval Anastomosis in Treatment of Portal Hypertension. C. B. Ripstein.—p. 570.

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Extravagal Influences on Gastric Hydrochloric Acid Secretion Induced by Stress Stimuli. J. D. French, R. L. Longmire, R. W. Porter and H. J. Movius.—p. 621.

Complete Transposition of Great Vessels.—Between 1946 and 1952, 29 cases of complete transposition of the aorta and pulmonary artery were observed by the authors in 17 boys and 12 girls at the department of surgery of the university of Minnesota medical school. The prognosis of this condition is unfavorable. The occurrence of the characteristic triad of persistent and severe cyanosis, dyspnea, and failure to gain weight in an infant suggests the possibility of the presence of complete transposition of the great vessels. Angiocardiography, by injection of an opaque medium into a systemic peripheral vein, is very helpful in establishing the diagnosis of complete transposition. In 9 of the 29 patients angiograms were performed with no serious complications. Complete transposition is usually incompatible with a prolonged life unless an associated defect is present to allow some mixing of blood between the two basically separate pulmonic and systemic circulations. Infants most desperately ill have hearts with fewer associated anomalies and are, therefore, the best candidates for surgical treatment with an eventual goal of cure in this

anomaly. The authors preferred an attempt to correct complete transposition of the great vessels anatomically by transposing all of the pulmonary veins and both venae cavae to match the abnormally reversed relationships of the aorta and pulmonary artery. Evidence is suggestive that patients with such a corrected circulation are physiologically normal and might anticipate a relatively normal life expectancy in the absence of other abnormalities. Of the 29 patients with complete transposition of the great vessels, 8 have been operated on. In the first four patients all of the right pulmonary veins were anastomosed to the right atrium. Two of these patients died and two survived, with both of the latter exhibiting significant objective and subjective improvement. This operation alone is not recommended unless large internal shunts are known to exist, because of the danger of inducing rapid heart failure in patients without adequate internal collateral shunts by unbalancing the systemic and pulmonic circulations. In four other patients, the inferior vena cava was shifted to the left atrium and the site of the cardiac end of the transected right pulmonary veins, the lung ends of which were anastomosed to the right atrium. None of these four patients survived. Because of these failures the authors believe that a previously prepared, but nonfunctioning, temporary and/or permanent preliminary shunt must be available so that once the blood flows from the pulmonary veins into the right auricle an appreciable amount of vena caval blood can be returned immediately to the left auricle in a compensating fashion. Their present plan, not yet tested, visualizes use of the azygos vein, canulated with as wide a bore polythene tube as it will accept, for shunting the blood from the superior vena cava into the tip of the right auricle.

Combined Adrenalectomy-Sympathectomy in Essential Hypertension.—Bilateral resections of the adrenal glands combined with bilateral sympathectomies of various types were performed on 29 women and 40 men between the second and sixth decades of life with severe arterial hypertension. The largest single group of patients had a removal of 95 to 98% of the total adrenal tissue, combined with a subdiaphragmatic sympathectomy and splanchnicectomy. It was found by experience that it was necessary to remove almost all of the adrenal tissue in order to obtain adequate reduction in blood pressures in most patients. There were two operative deaths, an operative mortality of 2.9%. Since operation nine additional patients died, making the over-all mortality 15.9%. Nine of the 11 patients who died were in group 4 of Smithwick's classification. Of the 69 patients, 21 obtained excellent results with postoperative blood pressures of 140/90 ± 10 mm. Hg in reclining and standing positions, 13 satisfactory results with blood pressure 140/90 ± 10 mm. Hg in standing position only, 28 continued to run elevated pressures but had improvement in symptoms and/or signs, and 7 were not benefited by the operative procedure. It is significant that 82% of the patients belonging to group 4 according to Smithwick's classification were benefited by the operation. A large number of these patients, who were previously considered unsuitable for sympathectomy alone, are now living and enjoying a more comfortable existence than they were before operation. Most of the patients with a favorable response in blood pressure require small daily doses of cortisone, desoxycorticosterone, and sodium chloride. The need for replacement therapy is best determined by the subjective symptoms of weakness and fatigue, which usually occur in advance of changes in blood chemistries. The need for close follow-up contact with these patients by a group entirely familiar with the patients and their backgrounds cannot be too highly emphasized.

Portal Venography Via Portal and Splenic Routes.—Roentgen definition of the normal anatomy of the portal venous bed was established by injecting 200 to 250 cc. of a thin barium sulfate mixture under minimal pressure into the superior mesenteric vein or inferior mesenteric vein of 50 fresh postmortem subjects in whom clinical and necropsy findings clearly excluded the possibility of portal hypertension. Thus roentgenograms of the portal venous bed were obtained which revealed three major anatomic types with respect to the relative position of splenic to portal vein; these have been designated as the tripod type, T type, and Y type. Anatomic variants with respect to the point of entry of the principal secondary tributaries entering the portal system were confirmed by the authors' roentgenographic studies as follows: The inferior mesenteric vein may join with splenic vein or the superior mesenteric vein, or enter in the crotch formed by the confluence of the splenic and superior mesenteric veins. The coronary vein also presents three varying points of entry, into the splenic or portal veins, or at the confluence of the two veins. As a result of these experiences, roentgen visualization of the portal venous bed at the time of operation is now routinely done in all patients with portal hypertension. Two techniques are used sequentially for operative portal venography: 1. The splenic portagram is accomplished prior to surgical incision, by the percutaneous injection of 40 to 50 cc. of a 70% sodium acetrizoate (Urokon sodium) solution into the splenic pulp through the ninth intercostal space. Laparotomy is then carried out through a short upper abdominal transverse incision. 2. In preparation for the portal portagram, the superior mesenteric vein is then isolated and canalized with a polyethylene catheter, and 40 to 50 cc. of a 30% sodium acetrizoate solution rapidly injected into the portal circuit within five to seven seconds. With the use of both types of roentgenograms operative portal venography has proved to be a valuable aid in the rational selection of portacaval or splenorenal shunt.

Portacaval Anastomosis for Portal Hypertension.—Of 25 patients with portal hypertension, all of whom had esophageal varices and gastrointestinal bleeding, 1 underwent splenectomy alone for congestive splenomegaly (Banti's syndrome), and 24 had a shunt operation, 17 for cirrhosis of the liver, and 7 for extrahepatic portal obstruction. Of the shunt operations, 14 were splenorenal anastomoses and 10 were portacaval of the side-to-side type. All patients survived the operation, and the follow-up period ranged from one to five years. The results of the shunt operations were rather disappointing in the patients with cirrhosis of the liver. Liver function tests did not show improvement in any patient but tended toward increased liver damage in all. Of the 17 patients, 9 derived temporary benefit in the regression of esophageal varices and cessation of gastrointestinal bleeding but relapsed and died within one year; 5 showed no improvement, and 3 remained well for more than one year. All of the deaths or relapses were accompanied by liver failure. Of the seven patients with extrahepatic portal obstruction, all were benefited immediately and in three the benefit was lasting. From this limited experience it appears that the portacaval shunt corrects only one of the factors responsible for bleeding from esophageal varices, and produces at best a temporary benefit. There is evidence that even partial deviation of the portal flow may impair liver function. Further experience is necessary before proper evaluation of portacaval shunts can be made.

Texas State Journal of Medicine, Fort Worth

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Clinical Use of Para-Aminobenzoic Acid. C. J. D. Zarafonetis.—p. 666.
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Clinical Effects of Khelltron in Angina Pectoris. M. R. Hejtmancik, E. D. Futch and G. R. Herrmann.—p. 679.
*Present Status of ACTH and Cortisone in Management of Cutaneous Diseases. W. C. King. and C. S. Livingood.—p. 682.
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*Inactivated Influenza Virus Vaccine in Therapy of Herpes Zoster: Clinical Evaluation. C. M. Griswold and S. S. Bowen.—p. 693.
Office Mycology: Report on 1,000 Cultures Taken in General Dermatologic Practice. M. Polsky.—p. 696.
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Treatment of Lacrimal Drainage System Disorders. E. R. Viers.—p. 704.
Present Status of Corneal Transplantation. L. Daily Jr. and R. K. Daily.—p. 706.
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Evaluation of Recent Developments in Neuro-Otologic Diagnosis. W. P. Anthony and H. A. Brown.—p. 711.
Acute Lupus Erythematosus: Treatment with Prolonged Administration of Cortisone Orally; Case Report. L. M. May.—p. 718.

Corticotropin and Cortisone in Cutaneous Diseases.—King and Livingood feel that, on the basis of experiences since the introduction of corticotropin and cortisone four years ago, it is possible to adopt certain general principles that serve as a

guide in selecting patients for such treatment. Each patient must be considered individually. If the disease is a potentially fatal one (pemphigus, acute disseminated lupus erythematosus, or a severe drug sensitivity reaction), administration of corticotropin and cortisone is indicated and indeed mandatory even if contraindications exist, such as hypertensive cardiovascular disease, peptic ulcer, or psychosis. If the patient has a disease which is nonfatal, the physician is not justified in accepting the possibility of any type of complication by therapy, even if it may be presumed to be transient and of little consequence, for example, temporary hypertension and slight fluid retention. Before treatment with corticotropin or cortisone is instituted, a complete history and physical examination is necessary with particular emphasis on the presence of tuberculosis, peptic ulcer, and cardiovascular, renal, and neuropsychiatric disorders. A chest roentgenogram should be made, if indicated by the history or physical examination. Urinalysis is also essential. Statements with regard to specific dosages are impossible. Often doses for the same patient must be changed from day to day. The goal is the suppression of the acute manifestations of the disease as quickly as possible —this to be followed by reduction of the dosage to a minimum maintenance level, and if indicated, gradual withdrawal of the drug. For the majority of patients, the initial dosage is 300 to 400 mg. given in divided doses during the first 24 hours and followed by gradual reduction to a maintenance level of 100 mg. or less. Maintenance therapy is not necessary in self-limited dermatoses such as acute contact dermatitis and consequently the drug is withdrawn gradually in from 4 to 14 days. Patients who require maintenance therapy (acute disseminated lupus erythematosus, exfoliative dermatitis, and pemphigus) are generally managed more satisfactorily if the dosage of cortisone is not more than 75 mg. daily. A broad knowledge regarding all aspects of the management of cutaneous diseases is essential if the physician is to use corticotropin and/or cortisone appropriately and safely.

Influenza Virus Vaccine in Herpes Zoster.—Griswold and Bowen used an inactivated influenza virus vaccine in more than 250 patients with herpetiform conditions. This treatment was suggested to them by Swinny in 1949. They use a vaccine composed of equal parts of formalin-inactivated types A and B influenza virus prepared from the virus infected allantoic fluid of chick embryos. They inject 0.5 cc. subcutaneously as early as possible in the course of the disease and repeat this dose in 24 or 48 hours, and again, if necessary within another 48 hours. Of 100 patients with herpes zoster treated with the influenza virus, 63 patients were adjudged to have severe involvement, 30 moderately severe, and 7 mildly severe. The average number of injections was 2.64. Resolution of lesions manifested by drying of the vesicles and crust formation took place in 95% of the cases within 10 days. The outlook for satisfactory results was materially enhanced by the early administration of the vaccine. Patients who had the dermatological lesions for a week or longer and had neuralgic pain showed considerably less response than patients in whom the disease was of shorter duration. Influenza virus vaccine is valuable in herpes zoster, because it inhibits the appearance of new lesions, dries up old lesions, lessens pain in early cases, and reduces the incidence of postherpetic complications, although it appears to have no effect on postherpetic pain. The ease of administration, lack of side-reactions, and low cost of the treatment make it satisfactory for the ambulatory office patient. Herpes simplex also responds promptly to injections of influenza virus vaccine. Of about 150 patients with herpes simplex who received injections of influenza virus vaccine, 67% showed a response to one injection of the vaccine. Some patients who had recurrent episodes of herpes simplex were convinced that a series of five injections given at weekly intervals prevented the recurrent outbreaks for a period of seven to nine months, but permanent immunity apparently is not produced by this treatment.

U. S. Armed Forces Med. J., Washington, D. C.

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Virginia Medical Monthly, Richmond

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Inflammatory Ringworm in Man Due to Trichophyton Faviforme Contracted from Cattle. T. W. Murrell Jr. and J. D. Reid.—p. 572.
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Cancer of Thyroid: Incidence and Relation to Thyroid Diseases in Tidewater Area of Virginia and North Carolina. R. L. Payne Jr. and A. F. Strauss.—p. 578.
*An Appraisal of Anticoagulant Therapy of Myocardial Infarction. T. W. Green.—p. 581.
Ruptured Liver Due to Periarteritis Nodosa—Report of Case. E. M. Chitwood Jr.—p. 584.

Anticoagulant Therapy of Myocardial Infarction.—Despite the passage of eight years since the first introduction of the anticoagulants in the treatment of myocardial infarction, there is no unanimity of opinion concerning their value. This paper reviews the pertinent recent literature and draws some conclusions applicable for the average practitioner confronted with this problem. In two large hospitals, deaths caused by pulmonary emboli have risen in recent years, despite the widespread use of anticoagulants and vein interruption. The danger inherent in the administration of anticoagulants has not received due emphasis. The reported deaths from bishydroxycoumarin (Dicumarol) now exceed 100, and undoubtedly these are only a fraction of the actual number. During the period from 1948 to 1952 at the Johns Hopkins Hospital the author gained experience in the administration of bishydroxycoumarin to several thousand patients. There were no known fatalities caused by anticoagulants, and the system in use there could well be adopted by others. The prothrombin times were determined in a central laboratory and the bishydroxycoumarin therapy was ordered by the director of that laboratory and his assistants. Only a few persons with wide experience administered this therapy. Other anticoagulants with similar properties as bishydroxycoumarin have been introduced. The therapist should choose one agent and master its use. For maximum anticoagulant benefit for the first 48 hours, heparin should be used until bishydroxycoumarin becomes effective. The author concludes that anticoagulant therapy is not indicated routinely for the treatment of myocardial infarction, as good risk patients have no demonstrable need for it. Poor risk patients should receive these drugs according to present knowledge, although the final proof of their value is lacking. Bishydroxycoumarin should never be given in the presence of contraindications, in the absence of adequate control facilities, or by inexperienced therapists. Vitamin K_1 is an effective antidote and should always be available whenever bishydroxycoumarin is used.

FOREIGN

Acta Medica Scandinavica, Stockholm

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Dosage of Sanocrysin in Arthritis and Tuberculosis. K. Secher.—p. 350.
*Treatment of Incipient Apoplexy with Intravenous Aminophylline. F. Mainzer.—p. 362.
Interrelationships of the Individual Plasma Phospholipids and Cholesterol in Health and in Long-Term Diabetes Mellitus. V. P. Petersen.—p. 375.
Serum Copper, Serum Iron and Total Iron-Binding Capacity of Serum in Patients with Chronic Rheumatoid Arthritis. P. Brendstrup.—p. 384.

Treatment of Incipient Apoplexy with Aminophylline Given Intravenously.—In a study of 12 hypertensive patients, to whom aminophylline was given intravenously, 9 patients with incipient apoplexy and 1 patient with transient angiospastic attacks were successfully treated. This study establishes for many cases the vasoconstrictor pathogenesis of cerebrovascular accident. According to this concept focal softening and possibly hemorrhage may be the final outcome of arterial vasoconstriction, which may in time cause irreversible structural damage to the nervous tissue by ischemia. Intravenously administered aminophylline immediately abolished all manifestations of apoplexy, coma, hemiplegia, and aphasia in the 10 successful cases, and in one of the two failures temporary improvement was noted. These results can be conceived of only in terms of the vasoconstrictor concept and are a new and decisive argument in favor of this interpretation. Euphylline (a proprietary preparation), one of the group of soluble theophylline preparations of which aminophylline is the prototype, was used in most cases.

Archiv für klinische Chirurgie, Berlin

275:477-582 (No. 7) 1953. Partial Index

Significance of Accident Cases for Clinical Surgery. Five Year Survey: 1947 to 1951. E. Gögler and H. Laqua.—p. 477.
*Experimental Vascularization of Heart Muscle. M. Wenzl and G. Wense.—p. 519.
Milk- and Sugar-Sensitivity After Gastric Resection. H. Pfisterer.—p. 528.
Dilatation of Common Bile Duct in Roentgenogram. F. Strnad.—p. 544.

Experimental Vascularization of Heart Muscle.—An attempt was made to improve the blood supply of the heart muscle of dogs by implanting vessels of the systemic circulation directly in the myocardium. In 10 animals, the internal mammary artery was implanted in the left ventricular wall, at a distance of about 1 cm. from the descending branch of the left coronary artery. The location in the left ventricle near the apex of the heart was selected because, according to experience, this is an area of predilection for infarcts. In addition, the descending branch of the left coronary artery supplies the largest area of muscles with blood. The effect of the vascularization experiments was tested after an interval of six to eight months. Indirect proof of sufficient vascularization was provided in two dogs by ligation of the left coronary artery and vein with a ligature near the origin of the descending branches of the two vessels; it did not result in a loss of contractility in the ischemic area of the pericardium in the course of a prolonged observation of the beating heart. Both animals survived the ligature of the descending branch of the left coronary artery without impairment of their general condition and work capacity. Satisfactory and continuous filling of the entire coronary system with the contrast medium on roentgenologic examination seven months after the implantation in five of six animals was considered direct proof of the communication of the internal mammary artery with the coronary vascular system. A contrast medium depot in the passage between the internal mammary artery and the coronary vascular system was considered a manifestation of newly formed blood vessels. Such communication could not be demonstrated in only one dog, and, consequently, obliteration of the mammary artery had to be considered; it was undoubtedly due to a technical fault. Further microscopic studies are necessary for a definite explanation of the genesis of the alternative blood supply to the myocardium. The histological aspects of numerous thin-walled, irregularly shaped vessels and capillary vessels in the abundantly indurated connective tissue that surrounded the implanted vessel corresponded to that observed in so-called organizing inflammation and recanalization. There seems to be no contraindication to the application of the authors' method of vascularization of the heart muscle to the human heart despite the considerable differences between the experimental surgical intervention on the normal heart of a dog and the therapeutic intervention on the heart of a patient with coronary sclerosis, as well as between experimental ligature of a branch of a coronary vessel and the arteriosclerotic vascular occlusion. The ischemic human heart muscle shows even a particular tendency to the formation of anastomoses.

British Journal of Ophthalmology, London

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*Renal Adenoma: Review with Report of Two Further Cases. P. Childs and W. B. Waterfall.—p. 187.
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Giant Hydronephrosis in Double Kidney. P. J. Dennehy.—p. 247.
Jean Baseilhac (Frère Côme). B. B. Hickey.—p. 252.

Renal Adenoma.—According to Childs and Waterfall benign adenoma of the kidney requiring surgical treatment is not often reported, but each of them within a few months of each other, observed a case. A review of the literature disclosed that small adenomas of the kidney are seen not infrequently in routine postmortem examinations. The true incidence is difficult to determine; the smallest adenomas may escape detection because specific search is not made for them. The incidence of adenomas is equal in the two sexes but increases with increasing age. Reports of examination of large numbers of kidneys emphasize the association of adenomas with arteriosclerotic change in the kidney. The incidence of adenoma as well as carcinoma increases after middle life and parallels the incidence of vascular disease of the kidney. Adenomas may be barely visible to the naked eye, or they may reach the dimensions of the tumor described in one of the two cases presented here. The specimen, which consisted of a kidney and a large ovoid mass, weighed 2,470 gm. The presence of a mass in the case of larger tumors and hematuria in the smaller ones are the commonest presenting features. Pain may be present as an ache in the loin or as renal colic due to the passage of a blood clot. The diagnosis of renal tumor is made by intravenous and retrograde pyelography. Filling defect, distortion of calyces and renal pelves, and alteration

in renal shadow may be seen. The diagnosis made will normally be that of carcinoma of kidney, but the even outline of the filling defect and possible smooth elongation of the calyces may arouse suspicion. The treatment of choice is nephroureterectomy because it is impossible to be certain that the tumor is not malignant. If it were possible to be sure of the diagnosis, then nephrectomy would suffice, and even successful partial nephrectomy has been reported. In the two cases presented, the tumors were large but neither was associated with heavy bleeding. Radiologically both specimens showed smooth filling defects, and in one case elongation of the calyces was noted. Both tumors were associated with hypertension of some degree, yet in neither case did the adjacent renal tissue show arteriosclerotic change. Histologically both tumors showed the solid structure that is usual in the larger specimens, and it is interesting that the largest of the two was essentially tubular in structure. Neither tumor showed any suggestion of malignancy, but either might well have undergone carcinomatous change had the cell type been less typical.

British Medical Journal, London

2:579-634 (Sept. 12) 1953

Tuberculosis and Leprosy: Immunological Studies in Healthy Persons. J. Lowe and F. McNulty.—p. 579.
Bronchial Carcinoma: Incidence and Aetiology. R. Doll.—p. 585.
*Approach to Psoriasis. J. T. Ingram.—p. 591.
Urinary Steroid Excretion in Rheumatoid Arthritis: Changes in Ketonic and Non-Ketonic Fractions During Hormone Therapy. A. E. Kellie and A. P. Wade.—p. 594.
Post-Gastrectomy Syndrome: Deviation of Afferent Loop from Gastro-Intestinal Anastomosis. J. E. Schofield and P. St.G. Anderson.—p. 598.
Rabbit Serum Containing Specific Agglutinin for Red Cells of Newborn. E. W. Ikin, H. Lehmann and A. E. Mourant.—p. 602.
Alcohol-Induced Pain in Hodgkin's Disease. J. G. de Winter.—p. 604.
*Fatal Anaphylactic Shock Due to Penicillin. J. F. Pick and J. F. Patterson.—p. 605.
Local Infection with Pasteurella Septica Following Dog-Bite. D. F. V. Brunsdon and B. L. Mallett.—p. 607.

Approach to Psoriasis.—Psoriasis is a constitutional disorder expressive of disturbed adjustment between the patient and his environment. Allergic reactions may occur in psoriatic patients, but there is nothing to indicate that psoriasis is an allergic disease. Constitutional disorders tend to fall into groups, each characterized by a primary sphere of maladjustment. The maladjustment in psoriasis apparently involves the effect on the patient of his climatic environment. The incidence of psoriasis is highest among white persons living in temperate climates. Seasonal variation is common, and the condition is generally worse in winter than in summer. Secondary influences, which may be infective, endocrine, or nervous, are important in psoriasis, sometimes assuming the predominant etiological role. The condition, which occurs only in man, is primarily and essentially an epidermal reaction, and this fact may explain the importance of local therapy. Complete clearance of an eruption within two or three weeks is possible in almost every patient. The treatment used routinely at Leeds consists of a daily 10 minute bath in 20 gal. (75.6 liters) of water containing 4 oz. of a coaltar solution, followed by exposure after drying to an ultraviolet mercury vapor lamp, beginning with 30 seconds at 3 ft. (91.4 cm.), increased gradually as necessary to maintain a near-erythema dosage. A paste consisting of dithranol, 0.13 gm.; salicylic acid, 0.65 gm.; zinc oxide, 8 gm.; starch, 8 gm.; and soft paraffin (melting point 46 C) to 31 gm., is then applied to each lesion and allowed to dry. Talcum dusting powder may be used if desired. The patient is then covered with a stockinet sleeve dressing—vest, arms, and legs—after which he may dress and pursue his normal routine, returning in 24 hours for another treatment. Dithranol is an oxidizing agent, and it must be used judiciously to prevent irritation or burning of the normal skin. The zinc paste cannot be used on the scalp at any time but should be replaced with dithranol ointment B.P. or a pomade with mercury, salicylic acid, and tar, or both. Individual variations may be necessary in certain cases, but treatment must be continued until the skin is completely clear; not a single active lesion can be left if extension is to be avoided. Hospitalization is advisable, especially for a first course of treatment, but good results can be obtained even by modified home therapy. A daily bath with tar soap and regular care of the scalp are desirable as prophylactic and maintenance measures after the psoriasis has cleared.

Fatal Anaphylactic Shock Resulting from Penicillin.—The symptoms of sensitivity to penicillin are varied and range from a simple urticarial rash to severe and even fatal anaphylactoid reactions. A 31-year-old woman with bronchial asthma of 2½ years' duration, frequently associated with respiratory infection, was treated for four days in January, 1952, with penethamate (Estopen) hydrochloride, 500,000 units daily, and epinephrine (Adrenalin) hydrochloride as necessary. She had no unusual symptoms. She had a fresh respiratory infection accompanied by an attack of asthma in December, 1952. Treatment with penethamate was again instituted; the first injection of 500,000 units, given immediately after 0.5 ml. of 1:1,000 solution of epinephrine hydrochloride, was followed by a slight headache and a feeling of faintness, which passed in a few minutes. The second injection, consisting of 500,000 units accompanied by 0.75 ml. of hyperduric epinephrine given the next day, was followed five minutes later by precordial pain lasting for several seconds. After this the patient appeared quite normal and conversed normally for another five minutes; then she suddenly collapsed and lost consciousness. Respirations became gasping and infrequent, and the woman died after a few minutes. A severe reaction on the first day may have been prevented by the simultaneous administration of epinephrine with the first injection, and the fact that slow-acting hyperduric epinephrine was given with the second injection may have allowed the fatal reaction to take place. Deaths resulting from penicillin hypersensitivity are fortunately very rare, but the possibility that fatal accidents may occur should be emphasized. There is no predictable pattern in penicillin hypersensitivity reactions—several courses of penicillin may not give rise to symptoms before and even after severe allergic reactions. Death may be caused by either crystalline or procaine penicillin, and careful inquiry for signs of previous allergic phenomena should be made before penicillin of any kind is repeatedly administered to any patient.

Journal de Médecine de Lyon

34:675-700 (Sept. 5) 1953. **Partial Index**

*Walking Test Before Decision on Mitral Commissurotomy. M. Lehmann and F. Karali.—p. 675.
Treatment of Gastroduodenal Hemorrhages of Ulcerous Origin. M. Girard.—p. 685.

Walking Test Before Decision on Mitral Commissurotomy.—Performance of the walking test serves as a check against the symptoms described by the patient. The test is simple and virtually without danger. It consists of a careful examination of the patient with regard to pulse rate, respiration, maximum breath holding, pulmonary auscultatory signs, and electrocardiogram recording. Next, the patient rapidly walks a 440 meter course having a 2.5 meter elevation. The test administrator accompanies the patient both going and returning and notes the time required for the entire trip and for each half. Finally there is a reexamination of the pulse rate, respiration, maximum breath holding, and pulmonary auscultatory signs. These are repeated every five minutes after a second new electrocardiogram has been made, until the patient returns to normal. When he has recovered, he is carefully interrogated as to the sensations experienced during the walking test. Responses of the 45 patients with mitral endocarditis tested were classified in four types: major tests (7 patients), in which pulmonary edema or hemoptysis appeared; clearly positive tests (13 patients), in which pulmonary auscultatory signs or fits of coughing appeared; feebly positive tests (13 patients), in which slight coughing and general disturbances appeared during the test itself; and negative tests (12 patients). Seven of this last group were operated on, on the basis of other evidence; six of them had mitral stenosis. These patients had not reacted normally to the walking test; it is to be hoped that further improvements in the test will enable it to incorporate these subtler symptoms.

Journal Neurol., Neurosurg. & Psychiatry, London

16:127-212 (Aug.) 1953

Tumours of Glomus Jugulare. R. A. Henson, J. V. Crawford and J. B. Cavanagh.—p. 127.
Pathological Report of Case of Phenylpyruvic Oligophrenia. J. A. N. Corsellis.—p. 139.
Nervous Discharge from Small Painless Lesions in Skin and Muscle. P. W. Nathan.—p. 144.
Examination of Cerebrospinal Fluid and Cerebral Cyst Fluid by Paper Strip Electrophoresis. J. N. Cumings.—p. 152.
Early Diagnosis of Tumours of Cauda Equina. J. N. Milnes.—p. 158.
Nocturnal Myoclonus. C. P. Symonds.—p. 166.
Familial Hemiplegic Migraine. C. W. M. Whitty.—p. 172.
Periodic Paralysis. E. R. Bickerstaff.—p. 178.
Ribosuria in Muscular Dystrophy. W. B. Matthews and M. J. H. Smith. —p. 184.
Personality Changes After Operations on Cingulate Gyrus in Man. P. M. Tow and C. W. M. Whitty.—p. 186.
Photo-Metrazol Sensitivity in Catatonic Schizophrenia. D. M. Leiberman and J. Hoenig.—p. 194.
Electromyographic Studies of Emotional States in Normal Subjects. P. P. Newman.—p. 200.

Medical Journal of Australia, Sydney

2:121-160 (July 25) 1953

Fevers of Mackay District, Queensland. E. H. Derrick, A. H. Berry, J. I. Tonge and H. E. Brown.—p. 121.
*Surgical Treatment of Spontaneous Subarachnoid Haemorrhage. J. L. Dowling.—p. 130.
Polarographic Cancer Test. F. Ofner.—p. 135.
Heredity and Mental Disorder. S. J. Cantor.—p. 138.
Infective Hepatitis: Discussion on Its Mode of Spread in Families. D. J. R. Snow.—p. 139.
Rheumatoid Arthritis: System of Treatment. C. M. Marshall.—p. 142.

Surgical Treatment of Spontaneous Subarachnoid Hemorrhage.—Spontaneous subarachnoid hemorrhages are caused by the rupture of intracranial aneurysms, and the patient's subsequent course, if he survives the initial accident, depends on the size of the rupture, the cessation, continuation, or recurrence of bleeding, and the extent to which the surrounding nervous tissue has been damaged. Recovery may be complete or may be accompanied by neurological sequelae. The most constant physical finding is neck rigidity not infrequently associated with bilateral Kernig and Babinski signs. The intense headache which usually precedes the hemorrhage is followed by impairment of consciousness, varying from slight clouding to deep coma, and perhaps a few epileptiform fits. The finding of uniformly blood-stained cerebrospinal fluid on lumbar puncture will confirm the diagnosis. An intracranial aneurysm should be suspected when a patient presents certain clinical syndromes, notably (1) oculomotor nerve palsy associated with severe supraorbital pain; (2) bilateral hemianopia with intense headaches and a normal sella on x-ray examination; or (3) unilateral blindness in the absence of any local disease of the eye. Discovery of an intracranial aneurysm before rupture has occurred should lead to prompt institution of treatment, because it is impossible to say just when the bursting point will be reached. Conservative treatment is sometimes successful, but when a patient has survived an initial hemorrhage, he should be examined angiographically as soon as his condition permits; if an aneurysm is found on the carotid system, surgical treatment should be seriously considered. The choice of treatment, either arterial ligation in the neck or a direct intracranial attack on the aneurysm itself, will depend on the position of the aneurysm, the efficiency of the anastomotic circulation, and the patient's general condition. The presence of an intracranial aneurysm was demonstrated in 28 patients seen by the author; of these, 24 were treated surgically, 23 by carotid ligation and one by a direct attack. Six of the 24 patients died; three were in a desperate condition and might have been refused operation, one had a massive aneurysm beyond the scope of surgical cure, one had an abnormal circle of Willis with unsuspected atheroma, and only one died as a result of recurrent hemorrhage. Eighteen of the surviving patients are leading useful lives; one is recovering from hemiplegia, one, who is clinically well though idle, is considered untrustworthy, and in only one does incapacity appear to be permanent.

Revista Clínica Española, Madrid

49:287-356 (June 15) 1953. **Partial Index**

General Syndrome of Neoplasms. C. Jiménez Díaz.—p. 287.
*Pulmonary Cryptococcosis. E. Stiefel, J. Andreu Urra and J. Lazaro. —p. 293.
Asthma in Cardiac Patients. S. Almansa de Cara.—p. 308.
Mixed Pneumothorax. G. Manresa Formosa, J. Juncosa Orga and A. Agusti Vidal.—p. 311.

Pulmonary Cryptococcosis.—Pulmonary cryptococcosis is more frequent than it is believed to be. In the majority of the cases it is acquired by way of the respiratory tract and manifests symptoms and roentgen signs of various acute pulmonary diseases, especially of unilateral or bilateral pulmonary tuberculosis. Pulmonary cavitation is rare. Miliary forms are observed in diffuse types and in the advanced stages of the disease. Simultaneously with the pulmonary lesions, hilar and mediastinal adenopathies appear. The disease may be associated with and probably be the cause of Hodgkin-Sternberg's lymphogranulomatosis. In this association, cervical, axillary and inguinal adenopathies appear early. The diagnosis of pulmonary cryptococcosis is made by isolating the causative organism in the sputum of the patients, preferably from secretions obtained by bronchial aspiration. The authors report three fatal cases of pulmonary cryptococcosis in patients with a clinical and histopathologic diagnosis of Hodgkin-Sternberg's lymphogranulomatosis. Cryptococcus neoformans (Torula histolytica) was isolated from the sputum of the three patients. In the only case in which a necropsy was made, C. neoformans was isolated from the lymph nodes, the bone marrow, the lung, and the spleen. Pulmonary cryptococcosis should be considered in the differential diagnosis of pulmonary and lymph node diseases of obscure origin and also as a probable associated or causal disease of Hodgkin-Sternberg's lymphogranulomatosis.

Schweizerische medizinische Wochenschrift, Basel

83:751-770 (Aug. 15) 1953. **Partial Index**

*"Swing-Therapy" of Pulmonary Tuberculosis: Intermittently Administered Para-Aminosalicylic Acid and Streptomycin, Alternating Periodically with Isoniazid-Para-Aminosalicylic Acid; Early Results. E. Tanner, P. Baer and J. Wanner.—p. 751.
Communication Concerning Reduced Resistance to Isonicotinic Acid Hydrazid (INAH) After Discontinuation of Treatment. A. Petit. —p. 754.
Cation Exchange Resins in Treatment of Dropsy. A. F. Essellier, P. Jeanneret and H. Rosenmund.—p. 755.
Physiological Bases of Amino Acid Metabolism and Their Significance in Therapy. H. Berger.—p. 761.

"Swing-Therapy" of Pulmonary Tuberculosis.—A new form of chemotherapy, the so-called swing-therapy, has been suggested for the treatment of pulmonary tuberculosis. An intermittent course of *p*-aminosalicylic acid and streptomycin for two months is followed by a one month course of isoniazid combined with *p*-aminosalicylic acid; streptomycin is administered intramuscularly in doses of 1 gm. on one of three days; isoniazid is given daily by mouth in doses of 5 mg. per kilogram of body weight; on two of three days, *p*-aminosalicylic acid is given by mouth in doses of 10 to 12 gm., or occasionally by infusion in doses of 20 gm. daily. Of 168 patients with pulmonary tuberculosis, 41 were given this "swing-therapy"; 59 received isoniazid alone, 23 were given combined treatment with isoniazid and *p*-aminosalicylic acid and 45 intermittently received *p*-aminosalicylic acid and streptomycin. Duration of treatment varied from three to eight months, and only that of "swing-therapy" up to 10 months. Comparison of observations in these four groups of patients showed that clinical, bacteriological and roentgenologic results obtained with "swing-therapy" were better than those with combined streptomycin and *p*-aminosalicylic acid treatment or with combined isoniazid and *p*-aminosalicylic acid treatment. Especially recent, dense extensive infiltrations showed definite regression. Periodical alternation of streptomycin and isoniazid with *p*-aminosalicylic acid as the basic drug proved reliable in preventing the occurrence of drug

resistance. Except for sporadic allergic cutaneous manifestations during the isoniazid and *p*-aminosalicylic acid period of treatment, the "swing-therapy" was not associated with any serious side-effects.

Semaine des Hopitaux de Paris

29:2623-2692 (Sept. 10-14) 1953. **Partial Index**

Histological and Chronological Study of Development of Lesion of Eczema. J. Charpy, A. Stahl and P. Y. Castelain.—p. 2624.
Classic Immunological Theory of Eczema. J. Charpy and L. Oddoze. —p. 2633.
*Nervous Mechanism of Sensitization Eczema. J. Charpy, L. Oddoze, A. Stahl, and others.—p. 2639.

Nervous Mechanism of Sensitization Eczema.—Contact eczema is primarily not an epidermal but a dermal syndrome; it is a vascular process in which the reaction begins with vasodilatation and progresses through inflammatory edema of the dermis, with secondary infiltration of the basal layer of the epidermis, which may or may not result in the formation of vesicles of varying size and location. Numerous experiments have been performed to show that contact eczema can appear only when the circulation of the blood and lymph is intact, but these experiments do not take into account the integrity of the nerve supply, which may also explain the results obtained. Study of the part played by the nervous system in the production of sensitization and in the precipitation of eruptive attacks in sensitized persons shows that the vesicular syndrome is the response of a central reflex set in motion by any bipolar irritation of a sensitive pathway. Experiments with guinea pigs proved that the presence of a chemical allergen on the skin in contact with the peripheral sensitive endings and the simultaneous application of the same allergen to the posterior ganglion sets up a specific bipolar irritation which immediately produces a vesicular eczematous syndrome. The same mechanism is responsible for the vesicular syndrome of herpes zoster. Ordinary, nonexperimental application of a chemical substance to the skin in conditions assuring its penetration results in transmission of the allergen to the ganglion by way of the nerves, and the time required for sensitization is the time it takes to complete the transfer. Once the bipolar irritation has been set up, it remains latent for a long time, reappearing in the form of fresh attacks of eczema whenever nonspecific central or even peripheral excitation of sufficient intensity occurs. The close connection between the surface of the skin and the sensitive pathways revealed by these experiments should throw new light on various other syndromes affecting the skin.

Tidsskrift for Den Norske Laegeforening, Oslo

73:625-655 (Aug. 15) 1953. **Partial Index**

*Relapse in Pulmonary Tuberculosis After Effective Operative Collapse Therapy. M. Seip.—p. 625.
Guillain-Barré Syndrome: Report of a Case with Respirator Treatment with Almost Complete Recovery. O. Mørstad.—p. 627.
Multilocular Renal Cyst with Bleeding. K. Bie.—p. 630.
Fatigue Fracture of Neck of Femur and Tibia. K. W. Wefring.—p. 631.
Conservative Treatment of Stress Incontinence in Women. P. A. Nilsen. —p. 633.

Relapse in Pulmonary Tuberculosis After Effective Operative Collapse Treatment.—In the follow-up of 537 patients from 3 to 14 years following successful collapse treatment by thoracoplasty or extrapleural pneumothorax, 131 relapses were registered—61 among the 216 thoracoplasty patients and 70 among the 321 extrapleural patients. Seip estimates that milder or more serious recurrences of the pulmonary tuberculosis are to be expected within 10 years after operation in about one-third of the patients effectively treated by these methods and within 15 years in about half the patients. The frequency of relapse does not decline noticeably from year to year as far as the examination has gone. Fatal relapses and relapses not cured to date were more frequent after thoracoplasty than after extrapleural pneumothorax. With both methods most of the relapses were in the untreated lung. In case of relapse the prognosis was better in the cases with small and moderate cavities in one apex and relatively more healthy lung tissue. In the long run recurrence of the pulmonary tuberculosis represents the greatest danger to these patients, and every effort should be made to save as much as possible of the pulmonary function. The main point in favor of extrapleural pneumothorax in collapse therapy is that it causes less interference with the pulmonary function.

Ugeskrift for Laeger, Copenhagen

115:1107-1138 (July 16) 1953

*Raw Egg Yolks as Supplement to Roentgen Treatment of Osteogenic Sarcoma in Children (Patients Under 18) from May 1, 1950, to May 1, 1952. C. Krebs.—p. 1107.

Raw Egg Yolks as Supplement to Roentgen Treatment of Osteogenic Sarcoma in Children.—Sarcomas of the bone usually start in the metaphysis or diaphysis, and, although they can penetrate muscles, fascia, vessels, and skin, they rarely advance beyond the epiphyseal line. For years Krebs has tried various methods for arresting the growth of these tumors, but of 32 patients treated in the 14 years up to May, 1950, none are living. Since that time he has supplemented roentgen treatment with the administration of eight raw egg yolks daily on the assumption that fresh raw egg yolks contain the necessary growth hormones. Possibly to increase calcium deposit, regarded as a factor in the healing process, the eggs used are from hens fed daily on common meal. The seven cases thus treated, in patients aged from 8 to 16, are described in detail. The average length of life for these patients is at least 626 days, and the survival time of three of the patients exceeds the life expectancy by more than four times the average expected.

Ztschr. f. d. ges. innere Medizin, Leipzig

8:573-620 (July 1) 1953. **Partial Index**

*Experiments with Hepatitis Virus. G. Wildführ.—p. 573.
Study of New Method for Influencing Erythrocyte Sedimentation Rate with Lithium-Carmine. D. Schmidt-Ramsin.—p. 581.
Treatment of Leukoses in Children with Cortisone and Corticotropin (ACTH). J. Oehme.—p. 591.
Chronic Cor Pulmonale Secondary to Pulmonary Embolism. K. Bobek and J. Vaněk.—p. 596.

Experiments with Hepatitis Virus.—The serum and the bile obtained from 169 patients with hepatitis were injected into hamsters or in hamsters and simultaneously in canary birds, green finches, or siskins. In parallel experiments serum and bile of patients with hepatitis were inoculated in chicken eggs, which had been incubated previously for 10 days and were incubated again for four days after the inoculation. Results showed that the infectious agent was transmitted from 26 of the 169 patients to hamsters alone, and from one patient to the chicken embryo alone; simultaneous transmission of the infectious agent from 8 patients occurred in hamsters and canary birds, and from 17 patients in hamsters and chicken embryos. In addition, positive results were also obtained with the passage of the chorioallantois, which had shown mild opacification, or with the sterile filtrate of pulverized, pathologically changed chicken embryo livers to incubated chicken eggs or to hamsters, and from hamsters back to chicken embryos. Certain irregularities in these experiments may depend on variation of resistance to the virus in the animals experimented on. Microscopic examination of the liver of the experimental animals and of the chicken embryos always showed the same changes among which necrosis was an important symptom. In the passage experiments, the incubation period was frequently shortened, but occasionally a prolonged incubation period was observed. These phenomena may have been caused by variations in the virulence of the pathogenic agent. A sudden stop of the passages was not a rare occurrence. Absorption tests with convalescence serums and viruses obtained by passage revealed the occurrence of several serologic types of the hepatitis virus: one type for the serogenous form of hepatitis; and at least two types for the epidemic hepatitis. Additional serologic types may be considered. Photographs made with the aid of the electron microscope of the sterile, pathologically changed liver filtrates showed small round corpuscles, 35 to 50 mμ in size. The same material proved to be infectious in animal experiments and specific in the absorption test.

BOOK REVIEWS

Dermatology in General Practice. By Jacob Hyams Swartz, M.D., Assistant Professor of Dermatology, Harvard Medical School and Post-Graduate School, Boston. Foreword by C. Guy Lane, M.D. Cloth. $11. Pp. 581, with 253 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1953.

This book is intended for the general practitioner and serves well the purpose for which it was prepared. In it can be found excellent black and white illustrations; detailed information on clinical picture, etiology, differential diagnosis, and treatment that is offered in brief but informative style; and general discussions that provide a wealth of material sometimes overlooked in more didactic presentations of this subject. For example, there is a brief review of the anatomy of the skin, its physiology, and metabolic considerations. There is also a discussion of the care of normal as well as abnormal skin, and of the diseases of the hair and scalp, face, trunk, and other parts of the body. The reader who wonders about the care of the feet, hands, or face, the effect of sun exposure, the care of a wrinkled skin, the role of cosmetics, or the care of the baby's skin may find answers to his questions in this volume. There is an ample index, the type is plain and easy to read, and the size of the volume makes it handy to use.

The Ballistocardiogram: A Dynamic Record of the Heart Beat. By John R. Braunstein, M.D., Ph.D., Associate Professor of Biophysics and Assistant Professor of Medicine, University of Cincinnati, Cincinnati. Publication number 143, American Lecture Series, monograph in American Lectures in Circulation. Edited by Irvine H. Page, M.D., and A. C. Corcoran, M.D. Cloth. $3. Pp. 84, with 41 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1953.

This monograph records two lectures delivered by Dr. Braunstein at the University of Cincinnati in 1951. The major portion of this book is concerned with physical principles of the ballistocardiogram and its physiological applications. There is a brief description of the abnormal ballistocardiogram and its relation to disease. The theory of the vector ballistocardiogram and design and construction of the instrument are discussed with diagrams in a short chapter. There is also an appendix in which some of the physical and mathematical constants of the instruments used are discussed in some detail. A short bibliography containing the important references in the field is given at the end of the book. This monograph is a good reference book for those already familiar to some extent with the subject of ballistocardiography.

Die Ostitis deformans Paget. Von Dozent Dr. med. habil. W. Hirsch, Oberarzt der medizinischen Universitätsklinik Leipzig. Cloth. 22 marks. Pp. 216, with 92 illustrations. Georg Thieme, Thomaskirchhof 21, (10b) Leipzig C 1, 1953.

Hirsch reports the results in a series of 136 patients with osteitis deformans (Paget's disease). Because this condition is still overlooked and erroneously classified as rheumatism, the appearance of this monograph is timely. Hirsch brings out that von Recklinghausen's views and Paget's views have been described by Engel and the findings attributed to one common disease, a concept that unfortunately found wide recognition. In his opinion not only is this an incorrect deduction but it represents retrogression as far as knowledge of this malady is concerned. He goes into great detail in correlating the clinical, roentgenologic, and pathological-anatomic studies of Schuchardt, Sternberg, Kienböck, Looser, and Schmorl. After a thorough evaluation of these studies, he is convinced that the osseous changes described by Paget and by Engel represent two basically different and distinguishable diseases. That the debate over the nature of osteitis deformans has not been closed is emphatically expressed. The theories regarding an inflammatory cause and the part played by primary vascular changes are admirably analyzed.

Hirsch has attempted to study the diagnostic problems of osteitis deformans in the light of functional and dynamic considerations not only from a theoretical point of view but also on the basis of his own studies. It is this latter fact which gives this presentation its greatest value. This work is mainly speculative and tries to correlate previous and modern knowledge. The literature is adequately and thoroughly covered. The reports on his personal series are flawless. For those interested in the chemical, cytological, histopathological, and roentgenologic aspects of this disease, this book will prove most illuminating. It is both a didactic as well as a philosophical approach to this still unexplained condition.

Atlas of Regional Dermatology. By Ernest K. Stratton, P.D., M.D., Research Associate, George Williams Hooper Foundation for Medical Research, University of California Medical Center, San Francisco, et al. Cloth. $15. Pp. 274, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1953.

This book should appeal to all practitioners as well as to dermatologists, for the material is arranged by regional groupings, an arrangement that is useful for purposes of differential diagnosis. There are, for example, 22 illustrations of different scalp lesions, both common and unusual diseases, and 12 each of diseases of the lip and ear. Also grouped together are lesions of the upper limb, lower limb, face and neck, nails, mouth, and lip. In addition, there are special chapters devoted to leprosy and to the exanthems. A brief account of the etiology, symptoms, diagnosis, and treatment accompanies most of the illustrations. Of the 596 photographs, only 25, grouped into 7 figures, are in color; these are small but most of them are good. The others, of larger size in black and white, are as excellent as such illustrations can be. The pages are large, 8½ by 11 inches, on heavy glossy stock. There is a complete index. It is evident that an immense amount of effort went into the collection and selection of this group of photographs, and Stratton's statement that the book is intended primarily for the student who requires visual help in identifying skin diseases has been fulfilled.

Introduction to Medical Science. By Gulli Lindh Muller, M.D., Assistant Research Physician, Thorndike Memorial Laboratory of Boston City Hospital, and Dorothy E. Dawes, R.N., M.A., Science Instructor, Schools of Nursing, Greater Boston. Third edition. Cloth. $4.75. Pp. 610, with 114 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1953.

The purpose of this book is to provide for the student nurse an over-all view of medical science prior to clinical instruction on the wards. Beginning with an outline of the history of medical progress, the authors proceed to discuss the role of the nurse in relation to the causes and manifestations of disease, methods of diagnosis, bases for treatment, preventive measures, and methods of control. Several chapters from the earlier edition have been completely rewritten, and additional information has been added on recent advances in medical science. New topics include recently isolated hormones, liver function tests, radiation syndrome and the use of isotopes, recent advances in the therapy of mammary and prostatic cancer, the treatment of leprosy, surgery of the brain, the latest information on use of the antibiotics and the vitamins, and geriatrics. The discussion of public health activities, including government organizations promoting health and welfare, has been brought up-to-date. New information has been added on sanitary conditions in the home and on other preventive medicine subjects. The book is clearly and concisely written and emphasizes the fundamental principles of medical science that will enable the nurse to make the proper adjustment to the needs of the patient, the physician, and the community.

These book reviews have been prepared by competent authorities but do not represent the opinions of any official bodies unless specifically so stated.

Dermatologic Formulary. Frances Pascher, M.D., editor. From New York Skin and Cancer Unit, Service of Dermatology. (Dr. Marion B. Sulzberger, Director). Revised edition. Cloth. $3. Pp. 150. Paul B. Hoeber, Inc. (medical book department of Harper & Brothers), 49 E. 33rd St., New York 16, 1953.

This pocket-sized book is arranged in three sections: topical remedies, systemic therapy, and articles for clinic use such as cauterizing agents, biologicals, and local anesthetics. This comprehensive formulary is designed to meet the needs of a large dispensary and includes not only the time-tested older remedies but a large number of the newer preparations including steroids. With each prescription there are explanatory notes of the action and use of the drug, the disease for which the drug is indicated, directions for its use, and contraindications. Examples of all types of medicaments are included, and, when necessary, both the scientific and proprietary names are listed. It is a selected formulary, so that only four antihistaminic preparations, two superfatted soaps, and four antibiotics are included. The index lists, in addition to the drugs, the commoner disease entities and remedies for them. Altogether, it is a useful compilation that should be a great help in prescribing for dermatological diseases.

The Green and Red Planet: A Physiological Study of the Possibility of Life on Mars. By Hubertus Strughold, Professor of Aviation Medicine, Head of Department of Space Medicine, U. S. Air Force School of Aviation Medicine, Randolph Field, Texas. With editorial assistance and foreword by Green Peyton. Cloth. $4. Pp. 107, with illustrations. University of New Mexico Press, Albuquerque, New Mexico, 1953.

Strughold considers in detail the almost boundless versatility of living things and summarizes with equal care the mass of data now available as to the temperatures, pressures, and chemical situations existing on the surface of Mars. He concludes that life of an order comparable to ours is impossible on Mars or on any other known planet of our solar system. It is extremely probable that the conditions that permit life on our earth are closely duplicated in other places in the universe, but at distances so great that signals, traveling even with the speed of light, cannot reach them and be returned within the span of a human lifetime. While this paradox gives a tantalizing note to the author's theme, his analysis of the physiological problem will interest many medical readers.

Criteria for Retirement: A Report of a National Conference on Retirement of Older Workers. Editor: Geneva Mathiasen, Secretary, National Committee on Aging. Held at Arden House, Harriman Campus of Columbia University, January 24-26, 1952. Under sponsorship of McGregor Fund and National Committee on Aging of National Social Welfare Assembly. Cloth. $3.50. Pp. 233. G. P. Putnam's Sons, 210 Madison Ave., New York 16, 1953.

About 70 experts from government, business, unions, public health, social work, and universities participated in the conference of which this volume is the report. Part 1 of the book summarizes the purpose, discussions, and recommendations of the conference, and part 2 contains three monographs written for the convenience of the participants. The first, "Retirement from the Point of View of the Worker," was written by a faculty committee of the Graduate School of Public Health of the University of Pittsburgh; Harland Fox, research fellow of the Industrial Relations Center of the University of Minnesota, contributed "Responsibilities of Employers, Workers, Unions, and Government"; and "Economic Problems of Retirement" was prepared by Sumner H. Slichter, Lamont Professor of Economics at Harvard University. Three speeches given at the conference (by C. P. Cochrane, Industrial Relations Director of Eastman Kodak Company; Harry Becker, Associate Director of the Social Security Department of the UAW-CIO; and Theodore Klumpp, M.D., president of Winthrop-Stearns, Inc.) form part 3 of the volume.

The stated purpose of the conference was to discover some criteria other than chronological age for continued employment of older workers. Included in the large amount of information gathered to evaluate and explore the problem were factual data on age and population trends, income, employment, and retirement policies; professional opinions on the social, psychological, and physiological aspects of aging and retirement; the methods, advantages, and hazards of employing older workers; the administrative problems of retirement; and the effect of the employment or retirement of older persons on the national economy. The conference and this book are attempts to present and integrate data and opinions from many fields of experience and various points of view, as they bear upon the problems of our aging population. The scope and factual richness of this report present contributions on a subject that has been of increasing concern to us all. The broad conclusions of a majority of the participants were that all interests concerned would profit if older persons worked as long as they were willing and able; that an arbitrary upper age limit for retirement should be set high enough to affect very few workers and, in an age range below this, health and competence should determine retirement decisions; and that the plant physician and union and management representatives should make retirement decisions jointly.

Of special interest to physicians are sections on physiological age versus chronological age, physiological age and job performance, and the value of health records accumulated over the years in assessing the proper time for retirement.

Rudolf Virchow: Doctor, Statesman, Anthropologist. By Erwin H. Ackerknecht. Cloth. $5. Pp. 304, with 3 illustrations. University of Wisconsin Press, 811 State St., Madison 5, 1953.

This book is the first full-length study of a remarkable 19th century personality whose influence dominated three spheres of activity. First, as a 30-year-old pathology professor, Rudolf Virchow proposed the concept, later termed "cellular pathology," that the basic units of life are the self-reproducing cells of living bodies and that pathology primarily has to concern itself with cell changes. Second, as a politician, he served for more than 40 years in the Prussian parliament as one of the militant opposition leaders against Bismarck and was one of the symbols of a liberal Germany until death intervened. Finally, as an anthropologist, Virchow systematically studied the physical characteristics and culture of the German people and offered concrete evidence to deny the myth of Teutonic supremacy. In addition, his medical interests stimulated him to engage in a reform movement that produced modern sanitation, school reforms, and the hospital system currently in use today. This book is recommended to all readers who are interested in learning of the achievements of a man of unusual intellectual powers, personal integrity, and courage.

An Atlas of the Commoner Skin Diseases. By Henry C. G. Semon, M.A., D.M., F.R.C.P., Consulting Physician for Diseases of Skin, Royal Northern Hospital, London. Colour photography originally directed by the late Arnold Moritz, B.A., M.B., B.C. Fourth edition. Cloth. $13.50. Pp. 370, with 147 plates reproduced by direct colour photography from living subject. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2; [John Wright & Sons, Ltd., 42-44, Triangle West, Bristol 8, England]; 1953.

This atlas is replete with photographs in color and brief descriptions of what may be seen in the illustrations. It is not as complete as some texts because it does not provide details of diagnosis, etiology, and treatment. It does offer, however, some remarkably outstanding colored photographs that will be of great help to the practitioner and student, particularly if he does not see some of the conditions very frequently. The descriptions of the disease and treatment are offered in capsule form, but this in no way detracts from the usefulness of the volume. It is a worthwhile addition to any library and should be as useful to the general practitioner, the student, or the pediatrician as to the dermatologist. The book is well bound, the paper is of good quality, and the type is pleasing to the eye.

Progress in Neurology and Psychiatry: An Annual Review, Volume VIII. Edited by E. A. Spiegel, M.D., Professor and Head of Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Cloth. $10. Pp. 591. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1953.

Continuing the pattern adopted in previous editions, this annual review of the literature is presented in four parts dealing with basic sciences, neurology, neurosurgery, and psychiatry. The chapter headings are the same as those used in the 1952 edition with the following exceptions: In section 2 the chapter on neurosyphilis has been omitted (neurosyphilis

does not even appear in the index), and a chapter on neuro-ophthalmology and another on clinical electromyography have been added; in section 3 the chapter on the vascular system has been replaced by a chapter on the surgical treatment of pain and motor disorders; and in section 4 the chapter on genetics in neurology and psychiatry has been replaced by one on alcoholism. Those who have found the previous volumes useful will want to add this one to their libraries. Nonspecialists will find it a valuable reference work because of its wide scope and extensive bibliography.

Heredity in Health and Mental Disorder: Principles of Psychiatric Genetics in the Light of Comparative Twin Studies. By Franz J. Kallmann, M.D., Principal Research Scientist (Medical Genetics), New York State Psychiatric Institute, New York. With foreword by Nolan D. C. Lewis, M.D. Cloth. $6. Pp. 315, with 89 illustrations. W. W. Norton & Co., Inc., 101 Fifth Ave., New York 3, 1953.

This book succinctly summarizes evidence for the genetic basis of health and mental disorder. It is based on the three lectures of the 19th series of the Thomas W. Salmon Lectures, which Dr. Kallmann, eminent for his research on the inheritance of schizophrenia, was invited to give. The present book brings together the results of Dr. Kallmann's 16 years of research for the New York State Psychiatric Institute, involving not only the genetic basis of schizophrenia but also many other psychiatric diseases. The first part of the book, "Heredity in Relation to Mental Health," is an excellent review of the general principles of genetics and their historical development, though it may be difficult reading for those who have never had a beginning course in genetics. In order to investigate the part played by heredity in disease, Dr. Kallmann has studied thousands of pairs of twins, of both the monozygotic or identical inheritance type and the dizygotic or different inheritance type. Profuse use of pictures of the twins throughout the book enlivens the material. The second part of the book, "Heredity and Mental Disorder," gives evidence for the hereditary basis of psychoneurotic and delinquent behavior, deficient resistance to stress and infection, pathological sex variants, psychotic reaction types of all kinds, convulsive diseases, neurological disorders, and mental deficiency.

In the last section, Dr. Kallmann applies the results of genetic research to mental health planning. Correcting common misconceptions regarding the role of heredity, Dr. Kallmann dispels the fear that, because a hereditary basis for disease is found, one must be pessimistic regarding treatment, by citing hormonal treatment for eunuchoid condition and insulin for diabetes. Nor does the existence of a genetic factor in psychiatric illnesses minimize the psychodynamic significance of unfavorable environmental influences that may have precipitated the illness in genetically predisposed individuals. The constructive use of research in human genetics as differentiated from pseudoeugenic fanaticism is described in marital counseling and other situations.

Fool's Haven. By C. C. Cawley. Cloth. $2.75. Pp. 210. House of Edinboro, Publishers, 21 Edinboro St., Boston, 1953.

This is a short, fast-moving story of a college student and his fiancé, the daughter of a member of a religious sect that believes in faith healing and forbids any reliance on medical care. "One can not have both God and a doctor," the self-ordained pastor of this sect is quoted as saying. The story is probably not lasting prose, but it raises what may be a lasting question, namely, the right of society to interfere with a person's religious beliefs when those beliefs deny to a sick person proper medical attention. The student is amazed when he discovers that his future mother-in-law will not allow her son to be given Pasteur treatments after he was bitten by a rabid dog. He is, of course, irate but powerless to intervene. When his fiancé dies of acute appendicitis without having been offered the advantages of proper medical care and hospitalization, her mother is found guilty of manslaughter. The student's satisfaction over this fact is marred because the mother is paroled without serving even one day in jail and the pastor who urged her to act as she did is acquitted. It is difficult to view the question raised by this little book impartially, and it is quite likely that all who read the book will be angry. The faith healers will be angry because of the disbelief of others, who in turn will be angry because of the blind and unrealistic attitude of the faith healers. Regardless of one's beliefs, however, the question is fairly well presented and should stimulate many an informal discussion on the subject.

Psychosomatic Approach to Gynecology and Obstetrics. By Fritz Wengraf, M.D., Adjunct Neuropsychistrist, Beth Israel Hospital, New York, New York. Publication number 164, American Lecture Series, monograph in Bannerstone Division of American Lectures in Gynecology and Obstetrics. Edited by E. C. Hamblen, B.S., M.D., F.A.C.S., Professor of Endocrinology, Duke University School of Medicine, Durham, N. C. Cloth. $6.75. Pp. 346. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1953.

This book, written by a neuropsychiatrist, was designed to supplement texts on gynecology and obstetrics and to further the interest of obstetricians and gynecologists in a psychiatric approach to their work. Since the author does not use the highly technical terminology of psychoanalysis, physicians who are not specialists in psychiatry and psychoanalysis will find it easy to read. The book is divided into six sections on (1) functional disorders; (2) constipation; (3) minor gynecology, covering puberty, dysmenorrhea, psychosomatic uterine bleeding, functional amenorrhea, psychogenic leukorrhea, frigidity, and the menopause; (4) operative gynecology, including preoperative care of neurotic patients, postoperative neurosis, and anesthesia; (5) obstetrics, including gestation, parturition, confinement, lactation, and abortion; and (6) psychotherapeutics, treating the gynecologist's significance to woman's unconscious and methods of psychotherapy.

There are 50 illustrative case reports distributed throughout the book. At the end is an extensive bibliography of 516 references, and all the authors of these references are quoted at least once in the text. This book is well written, and the publishers, too, have done their part well. Obstetricians and gynecologists will find a considerable amount of instructive and interesting material in this book.

Health Principles and Practice. By C. V. Langton, B.S., M.S., Dr.P.H., Director of Physical Education, Oregon State College, Corvallis, and C. L. Anderson, B.S., M.S., Dr. P. H., Professor of Hygiene and Health Education, Oregon State College. Cloth. $4.25. Pp. 417, with 47 illustrations. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1953.

This is a college textbook for courses in health or hygiene. It has been designed by the authors to provide those who will be community leaders with "an appreciation and basic understanding of hygiene both from the standpoint of its contribution to personal health as well as the effect this knowledge may have if applied properly to the community in which they live." It presupposes an elementary understanding of body structure, function, and other aspects of human biology and deals directly with personal and community health interests in concepts and vocabulary on a college level. Excellent chapters give accepted views on heredity and eugenics, nutrition, exercise, fatigue, rest, air and sunlight, poisons, and personal care. The chapter on mental health includes a discussion of the development of a well-adjusted personality and suggestions for promoting mental health as well as the usual description of classical disorders. Sex and reproduction are covered in franker detail than is customary in a book of this type. A general view of community health is covered by chapters on international and national health services, state and local health services, and communicable disease control, and by a statistical discussion of changing concepts and approaches in the field of health.

In general this is a sound supplement to a college course on personal and community health. Items may need clarification or expansion by the instructor, and there will be differences of opinion on the administration of certain health programs. Nevertheless this book shows evidence of being written by an educator well versed in the subject of health.

Stedman's Medical Dictionary of Words Used in Medicine and Their Derivations and Pronunciation Including Dental, Veterinary, Chemical, Botanical, Electrical, Life Insurance and Other Special Terms; Anatomical Tables of Titles in General Use, the Terms Sanctioned by the Basle Anatomical Convention; the New British Anatomical Nomenclature; Pharmaceutical Preparations Official in the U. S. and British Pharmacopœias or Contained in the National Formulary; Biographical Sketches of the Principal Figures in the History of Medicine. Edited by Norman Burke Taylor, V.D., M.D., F.R.S.C., in collaboration with Lieut. Col. Allen Ellsworth Taylor, D.S.O., M.A. Eighteenth edition with etymologic and orthographic rules. Cloth. $11.50. Pp. 1561, with illustrations. Williams & Wilkins Co., Mt. Royal and Guilford Aves., Baltimore 2, 1953.

Reflecting the growth of medical knowledge, this 18th edition of "Stedman's Medical Directory" has 200 more pages than the 17th edition issued in 1949. Several thousand words and nearly 600 new illustrations have been added. The useful appendixes indicated by the subtitle have been continued, and others have been added, such as tables of pathogenic organisms, of weights and measures, and of standard weights according to height and age. The finished product, however, portrays the unresolved conflict between current usage, editorial preferences, and a sheer inertia that retains many terms long past their usefulness. Current usage is satisfied by inclusion of such compounds as "isonicotinic acid hydrazide," "2,3-dimercaptopropanol" (Dimercaprol), and para-aminosalicylic acid," as well as "adrenocorticotrophic hormone" (ACTH) and "17-hydroxy-11-dehydrocorticosterone" (cortisone). The editors' preference is expressed not only in the preface where they discuss "etymological miscegenation" but in their permitting such remarks as this under "sulfapyradine": "It is called dagenan and unfortunately M and B 693." Surely only inertia can be responsible for the continued inclusion of such terms as these: nephrauxe, nephremia, nephria, nephrism, nephrocapsectomy, nephroerysipelas, nephroptosia, and nephroscleria. Acid is given one column with its subheads, and, for some unexplained reason, acidum is given nearly four.

Unexplained, too, is the cross from sulfoxone sodium (the generic name) to Diasone (the proprietary); the widely variant definitions of acid, ascorbic, and ascorbic acid and of acid, chondroitic, and chondroitic acid; the use of neither cross reference nor definition under Ballance operation for the Koerte-Ballance operation; and putting sigma reaction under "S" but not under "Reaction." Most of the anatomical terms previously given in Latin have been translated into their English equivalents, but many other nouns keep their Latin endings. Thus "sulfanilamide" is used in the definition of "sulfa drugs" but under sulfanilamide itself there is only the cross reference "See Sulfanilamidum (U. S.)." Proofreading errors sometimes occur, as in the 11-line definition of Schwann's sheath, which contains three glaring misspellings, and in the filing of a well-known phenomenon under Schwartzmann instead of Shwartzman as used in the "A. M. A. Directory" and "Who's Who." Destructive criticism, however, is always easy and is necessarily somewhat unjust in appraisal of a monumental work of this sort. Amassing and organizing the medical vocabulary within a scholarly framework such as this is an achievement of no mean order, and one of value to anyone needing such a dictionary.

Zwang und Freiheit in der Erziehung: Erziehen, Strafen, Reifenlassen. Von Prof. Dr. Med. Heinrich Meng. Dozent für Psychohygiene an der Universität Basel. Zweite Reihe, Band I, "Bücher des Werdenden," begründet von Paul Federn und Heinrich Meng; herausgegeben von Heinrich Meng. Second edition. Cloth. 24.80 Swiss francs. Pp. 227. Hans Huber, Marktgasse 9, Bern 16 [Sole distributors for U. S. A. and Canada, Grune & Stratton, Inc., Publishers, 381 Fourth Ave., New York 16], 1953.

The author presents a comprehensive discussion of the question to what extent coercion and punishment are needed to supplement instruction and example in the rearing of youth. The opening chapters on the history of penology and pedagogy reveal the frightening significance of this problem today; it must be solved if the threat of human self-extermination is to be averted. The excellent closing section of 82 pages is a compact collection of quotations from both classic and recent source material. It is followed by author and subject indexes. This thoughtful, humane book deserves to be translated into English.

Copying and Duplicating Medical Subjects and Radiographs. By H. Lou Gibson, Technical Editor, Eastman Kodak Company, Rochester, New York. Publication number 136, American Lecture Series, monograph in American Lectures in Medical Photography. Edited by Ralph P. Creer, F.R.P.S., F.B.P.A., Secretary, Committee on Medical Motion Pictures, American Medical Association. Cloth. $5. Pp. 75, with illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto, 2B, 1953.

Beginning with a brief outline of the basic techniques involved in photographic copying and duplicating, Gibson then proceeds to cover, in a well-organized manner, the specific techniques of copying black and white as well as colored originals, duplicating colored transparencies in black and white, duplicating negatives and lantern slides, and reproducing radiographs. In each instance the types of equipment needed, including camera, lighting, and film, are considered. The material is presented so that it will be of value to the relative beginner in medical photography and will also serve as a review for the more advanced worker. The chapter on copying black and white and colored originals and the material on duplicating radiographs are especially well presented and will be helpful to the physician who is interested in clinical photography. The book is well documented, with many illustrations of superior quality.

Rehabilitation of the Physically Handicapped. By Henry H. Kessler. Second edition. Cloth. $4. Pp. 275. Columbia University Press, 2960 Broadway, New York 27; Oxford University Press, Amen House, Warwick Sq., London, E.C.4, 1953.

This book is a revision of the original text by Dr. Kessler, who has had over 30 years' experience in rehabilitating the physically handicapped. The first part of the book considers the problems of the crippled child, the injured worker, the disabled veteran, the chronically disabled. The second portion deals with the basic principles of rehabilitation in terms of physical restoration, rehabilitation centers, vocational guidance, vocational training, and job placement. The third section deals with rehabilitation problems encountered in the mentally and emotionally disabled, the orthopedic patient, the blind patient, and medical and surgical invalids. A final section of the book contains an interesting discussion of legislation and administration in relation to a national program of rehabilitation. The text provides very interesting reading, telling in general without great detail regarding specific techniques what procedures have been effective in accomplishing the rehabilitation of the handicapped. It is further enhanced by the presentation of numerous case reports. This book will be of particular interest to all those working in the broad field of rehabilitation and to the handicapped themselves.

Operative Surgery, Volumes I and II. By Guy W. Horsley, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Medical College of Virginia, Richmond, and Isaac A. Bigger, M.D., F.A.C.S., Professor of Surgery, Medical College of Virginia. Sixth edition. Cloth. $30 per set. Pp. 714; 715-1579, with 1274 illustrations by Helen Lorraine. C. V. Mosby Co., 3207 Washington Blvd., St. Louis 3, 1953.

The first edition of this book was published in 1921 and the fifth in 1940. The senior author, Dr. J. Shelton Horsley, died shortly after World War II ended, and it was decided to cease publication of this distinguished text for a time. It is a happy circumstance that this decision was reversed. The present work is dedicated to the author of the original work and represents the combined efforts of 20 members of the faculty of the Medical College of Virginia. It is, in reality, a new text, for the older work has been completely rewritten and brought up-to-date. There are 45 chapters in volume 1 and 42 in volume 2. Most of the sections are well written and adequately illustrated. The text is easy to read.

Drs. Horsley and Bigger have stated frankly in the preface their concept of the general surgeon: "The authors believe that there is danger in too high a degree of specialization and also believe it is necessary that surgeons be broadly trained, even though they may later restrict their work to certain areas or systems within the body." When Dr. Horsley published the first edition, he called attention to the importance of considering the physiological problems of the surgical

patient. In some sections in this new edition, the physiological approach to the surgical problems described is not discussed as adequately as it could have been. An example of this is found in the chapter on the liver, gallbladder, and bile tract. The bibliographies found at the end of each chapter often are not as complete or as discriminating as they should be. In spite of these criticisms, however, there is still to be found in these two volumes a wealth of material clearly presented and easily read. They will be helpful for reviewing specific techniques in a broad field of operative surgery.

Clinical Tropical Diseases. By A. R. D. Adams and B. G. Maegraith. Cloth. $10.50; £2. Pp. 508, with 65 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1953.

This book was written to "supply essential facts as dogmatically and concisely" as possible. In an attempt to achieve the first objective, all references to original sources have been eliminated. To serve the second objective, details commonly found in textbooks of parasitology and bacteriology have been reduced to a minimum, since the principal aim was to provide useful clinical information on diseases occurring commonly in the tropics. The first innovation that meets the eye is the order of presentation, namely, by alphabetic arrangement of subjects, beginning with "ainhum" and ending with "yellow fever." In most cases it is easy to follow the sequence by referring to the table of contents or to the subject headings at the top of each right-hand page. It is difficult, however, to understand why dermatomycoses and scabies are associated, even from a strictly clinical viewpoint, and why nutritional disorders are considered in one chapter and the sprue syndrome separately nearly 100 pages later.

As the reader might expect from the distinguished authors of this volume, the facts are, for the most part, authoritatively and clearly presented. In some instances, however, information concerning the geographical distribution of a disease is inaccurate and misleading, as, for example, the statement that vesical schistosomiasis is "established . . . in Asia Minor," without including foci of high endemicity of this disease in Arabia, Iraq, northern Syria, and Iran (page 317). Possibly the designation "Asia Minor" has a different connotation among British and American geographers. Similarly, Manson's schistosomiasis is incorrectly stated to be indigenous to Central America, but there is no mention of its endemicity in several parts of the West Indies (page 323). Moreover, there is no evidence that dracontiasis exists today in the Caribbean Islands and northern South America (page 73). The most valuable topic in each chapter is the description of the disease as a clinical entity. However, since laboratory methods must usually be employed to confirm the presumptive diagnosis and since clinical laboratory procedures are frequently not sufficiently detailed in the present volume, the reader would need to consult texts on parasitology, bacteriology, and hematology for essential techniques and evaluation of the findings. Advice on treatment generally is sound and timely. In diseases such as amebiasis and malaria, a preference is expressed for drugs that are readily available in British Commonwealth countries, not necessarily those employed currently by American physicians. It is astonishing to find that acetarsol (acetarsone N.F.), which is poorly tolerated, is recommended in combined antiamebic therapy instead of other arsonic acid derivatives (page 13); that mepacrine methanesulfonate B. P. (quinacrine hydrochloride U.S.P.) is listed in preference to chloroquine in the treatment of malaria (page 221); and that pamaquine naphthoate rather than primaquine is advised for use in combination with quinine or chlorguanide hydrochloride for relapsing vivax infections (page 222).

A number of the cosmopolitan diseases are treated extensively, including bacilliary dysentery, brucellosis, rabies, smallpox, and typhoid, since all of these are today more important in tropical than in temperate climates. Yet no mention is made of tuberculosis, which is one of the really serious diseases of native populations in the tropics, or of poliomyelitis, which is becoming established in Central Africa and other warm areas. The authors may have had justifiable excuse for these omissions, but no explanation has been offered. The appropriateness of the title "Clinical Tropical Diseases" could be questioned. Should it not have been "Diseases of Warm Climates" or "Clinical Aspects of Diseases in the Tropics"? In conformity with the purpose of the volume the latter would seem to be more descriptive of the contents. Several typographic errors have been noted, mostly of a technical nature. Among these is "pruritus," which is consistently misspelled "pruritis."

The textual material of some chapters is supplemented with well-selected clinical photographs and charts, a few good photomicrographs and half-tone illustrations, and a few relatively poor line drawings of the diagnostic stages of etiological agents. There is a fairly extensive subject index, which, however, fails to include many of the common names of the diseases considered and several of the drugs recommended. There is no bibliography. Since no sources are mentioned in the text, no author index is provided. The volume is pleasingly printed and is bound in insect-proof cloth. Many of the shortcomings of this text are common to first editions, and the more obvious ones undoubtedly will be corrected in a second edition. For the most part they are outweighed by the valuable clinical information that has been provided. By and large the authors have achieved their purpose. This book should prove to be a useful and ready reference to students and practitioners of medicine in warm climates.

New and Nonofficial Remedies: Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1953. Issued under direction and supervision of Council on Pharmacy and Chemistry, American Medical Association. Cloth. $2.65. Pp. 623. J. B. Lippincott Company, 227-231 S. Sixth St., Philadelphia 5; Aldine House, 10-13 Bedford St., London, W.C.2; 2083 Guy St., Montreal, 1953.

The present edition of "New and Nonofficial Remedies" strikes one immediately as being smaller than preceding volumes. This is due mainly to the fact that the section on tests and standards for accepted nonofficial preparations is now published in a separate volume. Since interest in the book was felt to be largely either medical or pharmaceutical, the new arrangement should be more appealing to most users of the book. Examination of the 23 chapters into which descriptions of accepted preparations are divided reveals no remarkable or extensive revisions except for the addition of some 35 new monographs and the replacement of the monograph "Synthetic Oleovitamin D" (because of the omission of viosterol in oil) by appropriate expansion of the monograph on calciferol-U.S.P. Viosterol in oil was omitted under the Council's policy for exemption of articles that have been retained in the U.S.P., N.F., or N.N.R. for at least 20 years. Exempted preparations are listed in the index with reference to the last edition in which they appeared; some 25 such references to the 1952 volume appear in the present index.

Several of the new monographs, which detail the definition, actions, uses, and dosages of newly accepted agents, are worthy of special mention, together with the corresponding brands accepted prior to Jan. 1, 1953: carbacrylamine resins (Carbo-Resin—Lilly), a mixture of carbacrylic resin, potassium carbacrylic resin, and polyamine-methylene resin for oral use as an adjunct to increase the fecal excretion of sodium in the treatment of edema; chlorotrianisene (TACE—Merrell), a nonsteroid estrogen; hexamethonium chloride (Methium chloride—Warner-Chilcott), a ganglionic blocking agent for use as a hypotensive agent; alkavervir (Veriloid—Riker), an extract of Veratrum viride for the same purpose; methantheline bromide (Banthine bromide—Searle), a parasympatholytic agent having anticholinergic as well as ganglionic blocking action; probenecid (Benemid—Sharp & Dohme), used as a urate eliminant in gout and as an adjunct in intensive penicillin or *p*-aminosalicylic acid therapy to increase blood levels of these anti-infectives; polymyxin B sulfate (Aerosporin sulfate—Burroughs Wellcome), a new antibiotic for intramuscular, intrathecal, or topical administration; streptokinase-streptodornase (Varidase—Lederle), a mixture of proteolytic enzymes derived from a strain of Streptococcus hemolyticus; and isoniazid (Nydrazid—Squibb, Pyrizidin—Nepera, Tyvid—Merrell), an isonicotinic acid derivative highly active against tuberculosis. The editing, indexing, printing, and binding of this book are up to the publisher's usual standard of excellence.

QUERIES AND MINOR NOTES

DISPLACED INTERVERTEBRAL DISK

To the Editor:—*The roentgenograms of one of my patients showed a narrowing of the space between the third and fourth lumbar vertebrae with osteoarthritis of the lumbar spine. A later myelogram indicated a displaced disk between these vertebrae. The patient complains of pain, especially in the right leg, thigh, and lower back, and obtains relief only by lying in bed. Sitting or standing causes the pain to return. He also has severe pain when sneezing or coughing. Would surgical removal of this disk benefit my patient, and might there be some crippling after-effects? Should the treatment be undertaken by a neurosurgeon or an orthopedist?*

John H. Brothers, M.D., Providence, R. I.

Answer.—Protruded intervertebral disks are managed differently in different sections of the country. In some sections the operation on the disk is performed by a neurosurgeon and in other sections by an orthopedist. In some places patients with protruded disks are seen by both an orthopedist and a neurosurgeon, and, working together, they decide on the treatment. If treatment is simply the removal of a protruded disk, a neurosurgeon performs it, but if, in addition, it is believed that a spinal fusion should be performed, this is done by the orthopedist. The decision whether to perform a fusion is difficult and usually depends on the presence of static pain in the back if the patient is relatively young and whether immobilization of a portion of the spinal column is considered necessary for relief.

Statistics vary as to the results obtained from operations on disks, and in a large series of cases satisfactory results were reported in about 61% following removal of the disk alone. A slightly better result was obtained in the patients in whom spinal fusion was also performed. In this patient the displaced disk is between the third and fourth lumbar vertebrae, but if the osteoarthritic changes occur throughout the entire lumbar portion of the spinal column, it would be questionable whether fusion would be advisable. If the arthritic changes were localized to the one joint only, fusion might be beneficial. The decision to perform spinal fusion would depend on the age of the patient. If the nerve roots are not already damaged, crippling after-effects usually do not result from a disk operation.

AMOUNT OF ALCOHOL THAT CAN BE TOLERATED

To the Editor:—*How many ounces of whisky (86 proof) can a normal healthy adult consume as a daily ration? How many ounces of beer can be taken as a daily ration? How many ounces of wine can be taken as a daily ration without impairing health? Does mixing these alcoholic beverages have any adverse effect?* *M.D., New York.*

Answer.—For the questions about the amount of alcohol that can be tolerated to be answered, it must be understood that the effect of alcohol depends largely on one factor, namely, the amount of alcohol that accumulates in the blood. The amount accumulated depends on the amount ingested, the size of the person, the concentration of alcohol in the beverage, the presence of food in the stomach, the rate of oxidation and elimination of the alcohol, and, particularly, on the rate of drinking. The average person can oxidize and eliminate about 6 to 10 cc. of pure alcohol per hour, so that he could consume about a pint (500 cc.) of 100 proof whisky in 24 hours without ever being intoxicated if he spaced his drinks properly. This experiment would, of course, have academic value only, since the consumption of alcohol below the rate of accumulation involves no satisfaction to the drinker. On the other hand, a single drink consumed rapidly on an empty stomach may produce measurable symptoms of intoxication. The relative intoxicating effects of whisky, beer, and wine depend chiefly on the amount of alcohol consumed but also on the dilution, so that the same amount of alcohol taken in various drinks will have the least effect when taken as beer and the greatest effect when taken as straight whisky. A convenient guide for comparison of the amount of alcohol in beverages is that 1 oz. (30 cc.) of 100 proof whisky contains about as much alcohol as 3 oz. (90 cc.) of wine (17% by volume) or 12 oz. (360 cc.) of beer (4% by volume, 3.2% by weight). The general health of a person is probably not affected by the use of alcohol as long as the alcohol is not used as a substitute for food and vitamins. Aside from the irritating action of strong alcohol on the gastric mucosa, other tissues such as the circulatory system, kidneys, and liver are probably not permanently affected by the small concentration of alcohol that can accumulate in the body. This concentration in body fluids reaches only about 0.7% in cases of death due to alcohol. The possibility of addiction to alcohol must always be considered, however, and the physician who advises patients to use beverage alcohol may be criticized if addiction occurs. The greatest danger from the use of these beverages concerns the relationship of drinking to activities. For example, the after-dinner drinks may be perfectly harmless if no important activities are undertaken at such times, whereas the drink taken before driving a car, running machinery, or performing any task that demands accurate decisions or mental acuity might be dangerous. The drinker should observe the following rule: For every two drinks he should wait three hours before undertaking important activities. Contrary to popular opinion, the mixing of alcoholic drinks does not increase the intoxicating effects of alcohol, since these symptoms depend on the actual amount of alcohol consumed and the other factors mentioned. However, this old wives' tale concerning the mixing of beverages may be of value, since promiscuous sampling may lead to greater consumption of alcohol, just as a great variety of foods may lead to overeating.

CEMENT AND RADIANT-HEATED FLOORS

To the Editor:—*Is a cement floor on the ground without a basement underneath conducive to rheumatoid conditions? Does a floor with radiant heat cause excessive sweating of the feet?* *M.D., Lake Mills, Wis.*

Answer.—The causes of rheumatoid conditions are bacterial, endocrine, neurogenic, and possibly emotional. Dampness and cold involving high humidity will not, per se, produce such conditions. The question then becomes whether a cold, damp climate will unfavorably influence a rheumatoid state. Many persons with joint or bone conditions predict, although oftentimes erroneously, the coming of inclement weather, and many such persons fare better living in climates such as that of Arizona or Florida. The reason for this is partly the subjective and emotional state brought on by the mental depression accompanying inclement weather. However, in part the condition results from impaired heat regulation, defective skin elimination, and distorted metabolism. While a dark, damp, cold basement apartment is undesirable for all human beings, the same condition could be brought about on the 10th floor. The only reason that a bare cement floor attracts attention is the chilling and discomfort that derives from the rapid loss of heat from contact with the cement floor. A steel floor would be much worse, and correspondingly a wooden floor would be better than either. A specific answer to this complex question is "yes."

The situation with regard to radiant floor heating is much different. The floor area emitting heat is so large that under proper conditions the floor temperature is only slightly higher

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically so stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

than the room temperature. The inhabitant of such a heated space ordinarily is not aware of the heat source in the floor except possibly in the local areas where the warmer air or water first enters the floor space prior to dispersion. Unless there is overheating, the temperature of the soles of the feet always is higher than that of the surface of the floor, so that the thermal exchange would favor the floor and not the feet. This would result in foot cooling rather than foot overheating, and would not cause unusual sweating of the feet.

POLYCYTHEMIA VERA

To the Editor:—*A patient has polycythemia vera. A normal hemogram follows administration of radioactive phosphorus (P^{32}), but the patient still has severe paresthesias. I would like to know the cause and the treatment; whether such a patient should avoid high altitudes; how early in this disease marrow changes take place; and whether cardiac arrhythmias occur early and if of any prognostic significance?*

M.D., Illinois.

Answer.—In polycythemia vera, paresthesias may be due to dilatation of the vessels of the skin, which persists to some extent even when the blood cell count is normal. There is no satisfactory treatment for this condition. In some patients the condition is aggravated by a hot bath and in others cold weather has an adverse effect. Such persons should, of course, attempt to protect themselves from the temperature that makes them uncomfortable. Small doses of irradiation given locally sometimes may be of benefit.

Regarding high altitudes, patients with polycythemia tend to bleed easily from mucous membranes, but if the blood cell count is normal as described above, the patient would probably not suffer from a change of altitude. If he is going to a very high place for a long time, some erythrocytosis due to high altitude might be superimposed on the recurring polycythemia vera. If one can diagnose the disease clinically and by peripheral blood studies, then marrow changes such as increase in cellularity, including all the elements, especially the megakaryocytes, probably have already occurred. Cardiac arrhythmias are not more frequent in polycythemia vera patients than in other persons of the same age group.

LEUKEMIA

To the Editor:—*A 24-year-old man has chronic myelocytic leukemia that was diagnosed two years ago. His only treatment to date has been a course of x-ray irradiation to his spleen of 400 r three months ago. His spleen shrank markedly but has since enlarged greatly again. He has been admitted to a hospital because of fever of about 10 days' duration, with daily elevations of 103 to 105 F. No cause has been found for this aside from leukemia. His spleen extends several inches below the umbilicus and several inches to the right of the midline. He also has anorexia, weight loss, fullness before his meals are finished, nausea, and vomiting. No lymph nodes are enlarged. His hemoglobin level, which was 6.6 gm. per 100 cc., has been brought up to 10 gm. by transfusions. On admission his white blood cell count was 60,000. Several days later it was 30,000, and about a week later it was down to 15,000. The differential count shows 45 neutrophils, 9 lymphocytes, 20 band forms, 6 myelocytes, 10 juvenile forms, 10 premyelocytes, and 0 myeloblasts. The platelet count is 60,000. No hemorrhage has been noted. What is the best plan of therapy?*

M.D., Pennsylvania.

Answer.—The occurrence of fever with daily elevations to 103 and 105 F in a patient with chronic myelocytic leukemia compels the assumption of either a conversion to acute leukemia or the presence of a serious complicating disease. The dropping white blood cell count, the low platelet count, and the large numbers of premyelocytes suggests that this is a conversion to acute leukemia. This can best be established by the examination of the patient's marrow, which may show changes not yet recognizable in the peripheral blood. The possibility of a complicating infection, especially miliary tuberculosis, must, however, be considered, since tuberculosis occurs frequently as a complication of leukemia and could account for the rapid enlargement of the spleen, the "hypersplenism" (pancytopenia), and the fever. The weight loss, anorexia, and other gastrointestinal symptoms may well have a mechanical basis secondary to pressure of the spleen on the stomach. Before therapeutic recommendations can be made, a precise diagnosis will have to be established. X-ray examination of the chest and examination of the marrow and sputum should help. If miliary tuberculosis is present, therapy should be directed towards its control. On the other hand, if this represents a conversion of chronic leukemia into acute leukemia, only transfusions of blood and antibiotics will be indicated. The recently introduced 6-mercaptopurine offers some possibility of lessening the severity of the exacerbation.

HERPES ZOSTER

To the Editor:—*A woman, aged 75, has been suffering from herpes zoster for seven weeks. I have used 16 ampuls of Protamide (a colloidal solution of a proteolytic enzyme), large injections of vitamin B_1, x-ray therapy, crystalline vitamin B_2 (Be-Dodec), and finally a cobra venom derivative (Cobroxin). The lesions were covered with diphenhydramine in a calamine base (Caladryl). Nothing has relieved the pain to any extent. She was seen by an excellent neurologist, who suggested that I try the cobra venom derivative and who did not feel that surgical procedures would be very helpful.*

Ernest W. Dales, M.D., Grand Rapids, Mich.

Answer:—There is no specific therapy for herpes zoster, and the measures employed are merely symptomatic. Although most patients recover without any residual symptoms, postherpetic neuralgia may persist for months or even years. In this case, the use of snake venom as suggested by the neurologist is infrequently of value. Analgesics are usually unsuccessful. In some instances, a nerve block with procaine or one of its derivatives may bring relief to the hyperesthetic area. In the occasional case, deep x-ray therapy may also afford some relief. Surgical procedures such as sectioning of the sensory root of the ganglion or of the affected posterior roots (in cases of spinal cord involvement) are also effective in some instances. Within the past year, the use of cortisone or corticotropin (ACTH) (and the preference seems to be for the latter) has also been of value in certain instances. In view of this patient's age, these drugs should be administered with extreme caution and with close supervision, with particular reference to side-effects. The antibiotics are occasionally of value in the acute stage but would be ineffectual in this case.

BURN OF HAND

To the Editor:—*On Sept. 18, 1951, a patient was using an acetylene blowtorch to cut a piece of iron. The "slag" dropped into the palm of the right hand, causing a burn that will not completely heal. There is a group of vesicles the size of a dollar, some of which contain pus. Cultures of the contents of vesicles have been negative for fungi. The patient has had 8 or 10 x-ray treatments, with no appreciable result. I have been treating this man's hand with a desquamating ointment of 20% salicylic acid and nitrofurfuryl methyl ether (Furaspor) cream used alternately at bedtime, since May 18, 1953. Have you any advice on this subject?*

M.D., Washington.

Answer.—A burn due to the events described should eventuate in healing of the lesion within a few weeks or, at most, a few months. If the lesion has failed to heal after two years, a more thorough investigation is in order. The contents of the vesicles should be rechecked in the laboratory for bacteria and fungi. Furthermore, a biopsy specimen should be examined to rule out the possibility of malignancy. During this period, therapy should consist solely of application of a bland emollient such as ordinary petrolatum, in conjunction with a mildly astringent wet dressing (such as aluminum acetate [Burow's

solution] in a dilution of 1 to 20), and should be continued for several weeks. Further measures would depend primarily on the findings encountered microscopically as well as by the clinical response to the preceding bland measures.

OPHTHALMIC OINTMENTS

To the Editor:—*I have read recently two articles condemning use of ophthalmic ointments in industry following corneal abrasions or the removal of imbedded foreign bodies. Before discarding this relatively common and time-honored procedure in a large industrial plant, we would appreciate some authoritative comment.*

M.D., California.

Answer.—Any ointment or antiseptic solution retards healing of corneal wounds and abrasions to some extent; however, the prevention of infection is so important that many authorities in industrial ophthalmology recommend them. Two authorities (E. P. Burch and G. H. Cross), writing in a standard textbook, recommend the use of an anesthetic and antiseptic ointment after the removal of a foreign body from the cornea and in severe abrasion of the cornea. Anesthetic solutions and ointments should be used sparingly, as both retard healing, and it is preferable to administer analgesics systemically to relieve pain. It has been routine practice with this consultant to instill an antiseptic ointment after the removal of a foreign body and for abrasions. This practice will be continued, although the use of local anesthetics will still be avoided so far as possible.

PAIN IN HEMIPLEGIC AREA

To the Editor:—*A 52-year-old white man has hemiplegia of the right side owing to cerebral hemorrhage. He is also aphasic. For a year and a half he has had almost continuous pain in the entire hemiplegic area. The pain bisects the body and is confined to his paralyzed side. I have used various narcotics but he had a shock reaction to 100 mg. of meperidine (Demerol), becoming colorless and pale with a weak to absent pulse and blood pressure of 60/40 mm. Hg. I have used methadone with fair results. What therapy will relieve his continuous pain?*

M.D., Pennsylvania.

Answer.—The pain in this hemiplegic patient may have two possible sources; one is the muscular pain due to spasticity in the paralyzed side; the other is vascular or visceral pain that follows the pathway of blood vessels. All of the potent analgesics such as meperidine or opiates have a hypotensive factor that is characterized by a persistent histamine-like effect on the terminal blood vessels. Therefore, the hemiplegic patient is apt to have a greater drop in blood pressure than the normal person. By far the most effective therapy for the relief of this pain would be laminectomy and anterolateral cordotomy. This, however, must depend on the condition of the patient. Since the pain is of a visceral type, it should respond to procaine intravenously, which can be given as an infusion over a period of one hour in doses of 500 mg. If the procaine relieves the pain, the relief will be out of all proportion to the duration of the infusion; daily infusions may correct the painful condition. In the treatment of this patient with opiates or other habit-forming drugs, the possibility of addiction must be weighed against the risk of laminectomy.

PIGMENTED MOLES

To the Editor:—*I am aware of the danger of removing black moles by ordinary surgical methods. Please let me know whether this danger has been eliminated by the employment of an electrical cutting current.*

Heinrich F. Wolf, M.D., New York.

Answer.—Any method of removal of a black mole carries with it some element of risk, and the question as to whether one modality is better than another is still unsettled. There are no convincing statistics to settle the matter one way or the other. There is a strong feeling among some experienced observers that malignant moles are already malignant by the time the physician is consulted and that treatment has little effect on their subsequent course. Shaw (*South. M. J.* **46**:286 [March] 1953) found that most dermatologists on the basis of their experience favored electrosurgical methods. The paper presents an interesting and up-to-date discussion of the treatment of pigmented moles.

BLACK DISCOLORATION BENEATH GOLD RING

To the Editor:—*In Queries and Minor Notes, Sept. 26, 1953, page 455, is a reply to a Washington physician who wanted information about black discoloration of the skin beneath a gold ring. I wish to offer another explanation for this phenomenon. The dermatologist is familiar with this manifestation and refers to it as "black dermographism." A complete description may be found in an article written by Urbach and Pillsbury in* The Journal, *Feb. 13, 1943, page 485. Essentially, "black dermographism" is believed to be a mechanical phenomenon in which a black line is produced by deposition of minute metallic particles on the skin. The condition will take place when a powder of sufficient hardness present on the skin is subjected to friction by certain metals. Face powder and street dust may fulfill the first role in this patient's complaint, while less than 18 carat gold (which contains a sufficiently high copper content to render adequate hardness) fulfills the second requirement for the phenomenon. The color of the powder present on the skin has no effect on the result.*

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TRICHLORETHYLENE (TRILENE) ANESTHESIA

To the Editor:—*In the answer to the question on trichlorethylene (Trilene) anesthesia in Queries and Minor Notes, Oct. 17, 1953, there is one point that seems to deserve comment. In his authoritative monograph, "Trichlorethylene Anesthesia" (Edinburgh and London, E. & S. Livingstone Ltd., 1953) Dr. Gordon Ostlere points out that the important toxic product produced when trichlorethylene is passed through soda lime is dichloracetylene and that the production of phosgene in significant quantities is unlikely under the conditions of administration. Dichloracetylene may produce, even in minute quantities, trigeminal palsy, which is the most feared complication of this anesthetic agent. In addition, it seems possible that use of a closed soda lime absorption system after previous administration of trichlorethylene may be hazardous inasmuch as elimination of the drug is slow. Ostlere reports a case of trigeminal palsy developing under such circumstances. This additional information would seem important inasmuch as the use of trichlorethylene is becoming more widespread. Careless administration may result in the above complication with subsequent unjust criticism of the drug.*

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To the Editor:—*In* The Journal, *Oct. 17, 1953, page 693, in answer to a query regarding how soon a different anesthetic may be used through the soda lime tower after trichlorethylene has been used, it is simply stated that a short interval should be allowed to elapse. The following case in Gordon Ostlere's book "Trichlorethylene Anesthesia" shows how easily cranial nerve palsy may be produced by the decomposition products of trichlorethylene over soda lime. "A woman in labor had self-administered trichlorethylene analgesia in her home, under the supervision of a midwife. She was then brought to the hospital, where Caesarean section was performed under cyclopropane anesthesia. She developed a trigeminal palsy, and when the anesthetist later investigated the closed-circuit apparatus by breathing from it he developed a similar lesion himself."*

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